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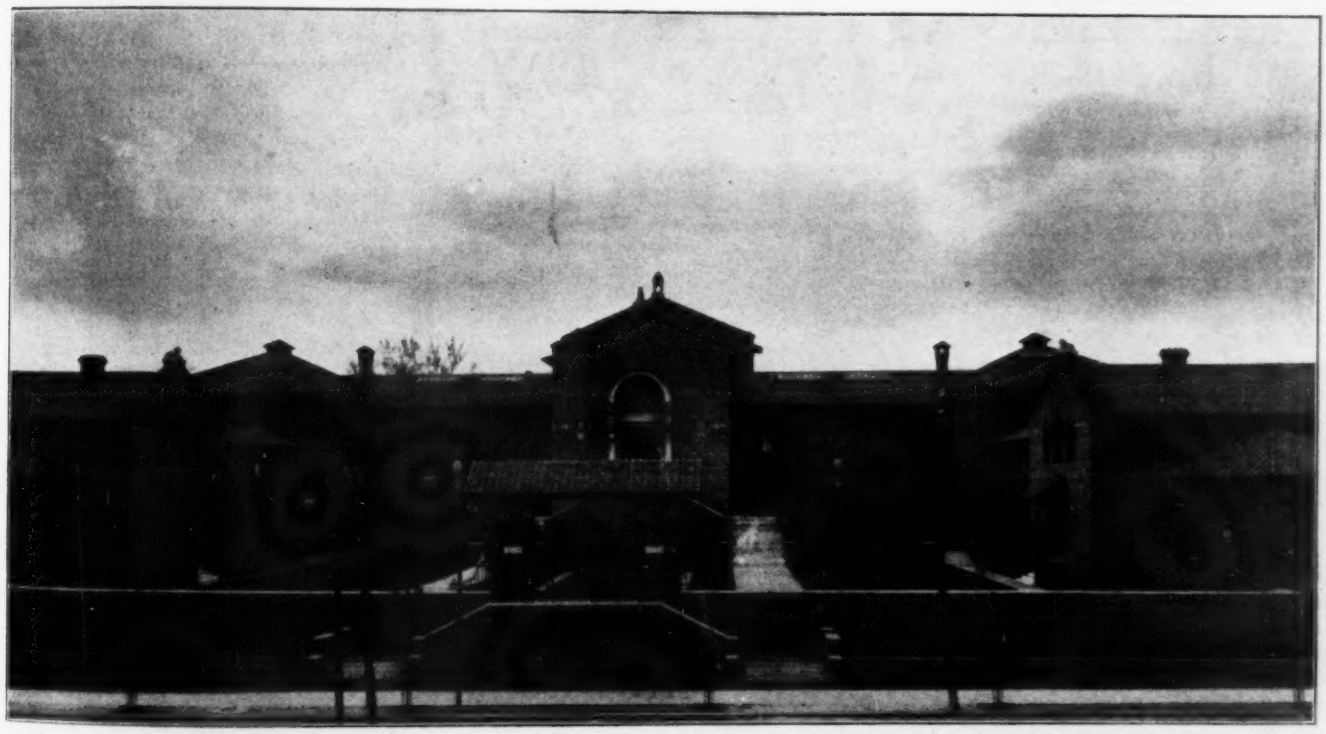
Business Premises, High-street, Doncaster. Mr. Sydney D. Kitson, F.R.I.B.A., Architect.

New Buildings, Queens' College, Cambridge. Mr. Cecil G. Hare, Architect.



University of Pennsylvania, Philadelphia. Archæological Museum: Front Elevation. (*See page* 595.)

Messrs. Day Brothers & Klauder, Wilson Eyre, and Cope & Stewardson, Joint Architects.

A MESSAGE FROM AMERICA.

IT is not often that we have the pleasure of listening to a paper which conveys the sensation of personal vitality to such an extent as that read by Mr. R. A. Cram at the Royal Institute of British Architects on Monday night. Mr. Cram holds strong opinions, and is not afraid of expressing them, and, whether we are inclined to agree or not, definite opinions clearly expressed have always an invigorating influence.

To borrow a much misused term, we may describe the meeting as a "Revivalist" one, and indeed it was this in two senses. Both the revival of the older ideals in education and the revival of the traditional forms of architecture as expressing and enhancing these ideals came under review. In regard to the first of these, Mr. Cram insisted firmly on the value of educational methods building up character as against those aiming primarily at imparting highly specialised knowledge.

In his view personality comes first and efficiency second. Doubtless the firm hold that this view is establishing for itself in the United States has only been secured by intense activity in its supporters, and we get hints of the stress of the battle when Mr. Cram slips into his Crusader mood.

With regard to the architectural question, we cannot feel so sure that the right lead is being given. If America is as our brilliant *confrère* pictures it, it is once more fighting over the old ground made historic by the labours of Pugin and Ruskin, and we could almost feel that we were transported back to those early Victorian days when the battle of the styles exercised such an exciting influence on architectural discussions. Is this the America of to-day? We confess we can hardly credit it. If not, though, how comes it that we see on the screen before us an amount of work—and so much of it really fine work—that almost enforces the imagination to believe in the domination of the British tradition in contemporary American architecture? The truth is that America is vastly bigger and vastly more active than the untravelled Briton can easily realise, and that the selection of even a single phase of its activity suffices for the moment to throw the others into the background.

Mr. Cram and his fellow-workers would, if we concentrated our attention on them alone, give us the firm conviction of an absolute unity of architectural ideals in Britain and the United States of America; but, desirable as such a consummation may be, we do not think that it may yet be regarded as having actually taken place. The influence of the Beaux-Arts

in the States predominates architectural design there to a far greater extent than Mr. Cram would like us to believe. For our part, we feel this influence to be beneficial, and as architecture on both sides of the Atlantic draws closer together we do not think that the logical element as represented by the methods of the Beaux-Arts will drop out in favour of the romanticism so attractively advocated by Mr. Cram and those who sympathise with him.

The future looms but vaguely before us; an ultimate harmonising of all the conflicting ideals of our own day is suggested, but the discovery of the means by which this will be effected is beyond our powers of philosophic deduction. The arts are not amenable to such methods of investigation, and the artist can only follow the highest light that is in him, leaving to fate the ultimate outcome of his efforts.

PAINTINGS AT THE ROYAL ACADEMY.

WE are so accustomed to be told year after year by those whose business it is to tell us that the Academy Exhibition is worse than usual that at least we cease to be alarmed. The country, as we all know, has been going to the dogs from time immemorial. The truth is, probably, that any exhibition arranged on these lines is bound to be somewhat tiresome and provocative of headaches at the best of times. In any year's output—when so many mediocrities are encouraged to produce paintings—the works of actual distinction must, we suppose, be relatively few, although no doubt they vary in number from year to year. Their effect on the general tone of the exhibition, or even their discovery by the critics, must depend to a great extent on their arrangement by the hanging committee, and that it is generally understood depends a great deal too much on circumstances which have no relation to the intrinsic merits of the works. If, however, an exhibition should—like an artist—be judged by its best works, this year can hold its own. Mr. Sargent's works are as amazing as ever. Not great pictures, perhaps, in every sense of the word, but achievements which in their way are unapproachable. Mr. Arnesby Brown's "Norfolk Landscape," which has been acclaimed as the picture of the year, certainly shows no falling away from previous standards; although we cannot help wondering whether human figures instead of cattle in the foreground would not have struck a higher note. But such works as these, or the pictures by Mr. Charles Sims, Professor George Clausen, and others, would give interest and distinction to any exhibition.

Although the usual crowd of uninteresting portraits of uninteresting people is relieved here and there by such distinguished works as Mr. George Henry's portrait of Leonard B. Schlesinger, Esq., we are none the less grateful to Mr. G. Spencer Watson for his two picture-portraits, with their fine colour schemes and rich decorative treatment—the more perhaps that decorative work is not well represented this year.

Mr. John Crealoch certainly has two pictures called "The Red Sofa" and "The Yellow Sofa," in which the evident intention is to design a pattern, and there are other pictures in which the same feature is present; but the only piece of pure decoration that we noticed is "The Bathers," contributed by Professor Gerald Moira. This is an interesting composition, treated in a light key of colour, but it is hung too high to be properly appreciated, and is so out of harmony with its surroundings as to suggest that a room should be set apart for such work, when no doubt enough would be forthcoming to fill it. It really does seem a pity that decorative works are treated in this way, and that definite steps are not taken to afford more encouragement to this important branch of painting.

Architecture as the subject-matter for pictures is well in evidence. There are the usual number of views of Della Salute, St. Mark's, and other Venetian scenes. In the Water-Colour Room we notice the Mosque of Abou l'Agag at Luxor and the leaning column at Karnak, by Mr. R. Phené Spiers; the Roman Theatre at Timgad, by Sir Ernest George; the Market Place, Taormina, a vigorous sketch by Sir Alfred East; and a careful and sympathetic study of the entrance to the Temple, Medinet Habu, Egypt, by Mr. Lancelot Crane.

Mr. H. E. Tidmarsh sends two panoramic views of London, one from the Tower Bridge looking west and the other from St. Mary-le-Strand looking east. They are carried out in a most thorough and painstaking way, and, whatever their artistic merits may be, they should certainly have much topographical and historical interest. An interesting piece of architecture in Gallery IX., the Yee Fung Mun Gate, Nanking, by Mr. Montagu Smyth, should not be overlooked.

Of the numerous examples of the interiors of buildings, with or without figures, probably the most notable is a Kensington Interior, by Mr. Frank L. Emanuel, a delightful rendering of a delightful subject.

It is inevitable, perhaps, that so much of the wall space should be taken up by "command" pictures relating to the Coronation. Mr. Bacon's picture of the ceremony in Westminster Abbey may be a success from the point of view from which it was commissioned, but somehow it entirely fails to give the atmosphere and general effect of the Abbey interior, which, after all, in a work of this historical interest is a matter of some importance.

NOTES.

Tattershall Castle. THROUGH the public-spirited action of Lord Curzon and his friends the lamentable incident of Tattershall Castle has at last been brought to a satisfactory conclusion. Lord Curzon, who bought the castle after its mantelpieces had been removed, has now recovered them, and after their reinstatement intends to throw the Castle open to the public. It is to be hoped that the feeling aroused over this matter will strengthen the hands of the Government and tend to convince them that there is a very large and influential body of opinion in this country supporting their proposals for the protection of ancient monuments, and that they may venture to go a step or two further in the direction of stringency than they have hitherto intended. Except for the damage which must have been inflicted on the mantelpieces by their removal, we suppose that no harm has been done in this case, but we cannot always rely upon a Lord Curzon to step in and save the country from the results of its own lack of interest and good management.

Competition Publicity. IT will be remembered that on April 19 we published a letter from Mr. C. H. B. Quennell advocating the exhibition of the Port of London Competition Preliminary Designs; also a "Note" upon it, in which we expressed our willingness to do what we could to give effect to this suggestion in our columns. This week we print a letter from Messrs. A. E. Maxwell and C. Orlando Law in support of what we gather from these and other sources to be a general consensus of opinion upon the matter. From many points of view, greater publicity in competitions which go through two stages is desirable. There is the educative aspect, upon which we laid stress. It cannot be overrated. And there is the whole group of reasons for publicity which operate in all competitions in the final stage, and make it a matter of course that all the designs may be seen at least by the competitors. These considerations are directed, of course, chiefly to the maintenance of that fair field and no favour upon which we pride ourselves in our public competitions. To this end alone, if to no others, all the designs should be seen at least by the competitors; and if it cannot be arranged officially it had better be done as best it can by other agency.

Assessing the Assessor. THAT aspect of the matter, of course, is relevant to the personal honour of the assessor, and in this country there is, in our larger competitions at any rate, little need of vigilance in that direction; though it should not be neglected. Professional integrity can seldom be questioned. But what may be criticised, what in conversation among architects is criticised, more outspokenly than in the Press, and what should be criticised in the Press more searchingly than personal considerations perhaps seem to permit, is not the honour but the intelligence of the gentlemen concerned. As we look over successive groups of the three or four premiated designs in competition after competition we find ourselves wondering again and again whether the assessor in each case had in his mind any conception of what was the right and what consequently was the wrong thing to do in the given case. For the designs chosen seem to be the embodiment of no one principle, right or wrong; but to represent severally the various groups of possible solutions. If one design of those chosen is the best of them that went for the right method, all the others must be attempts to go for a wrong one. They may be very creditable in themselves, but they do not on that account deserve

a place. If the assessor in each case really had some guiding principle firmly in his mind, all the premiated designs would be variations of the same solution of the problem in hand. Too often, however, we are forced to the conclusion that the assessor acted from the empirical standpoint—that fatal attitude which in varying degrees so vitiates all our efforts to-day.

Nationalisation of Railways.

THIS subject is continually cropping up, and is one in which the trader has a double interest as compared with the mere passenger or the man in the street. There has been much wild and unreasoning talk about it, and the attitude of Mr. Asquith, at his meeting with the Parliamentary Committee of the Trades Union Congress on Monday, is worthy of notice. The deputation had alluded to the advantage the railway companies are beginning to derive from their efforts to eliminate undue competition; rather unfairly belittling the many voluntary increases of the wages bill by which these advantages were shared by their employees. "The notion," remarked Mr. Asquith, "that you can reduce fares and rates, shorten hours of labour, and raise wages by paying, for the total capital value of the undertaking, a very small number of years' purchase is, I think, an illusory notion." The Prime Minister frankly stated that he did not think the burden of proof—which he places on those who are in favour of the nationalisation of railways—has been satisfied. "The State keeps a tight grip over the railways," he reminded them. Railway managers will feelingly endorse this, and perhaps it is better so than if the State had the sole control and direction of the railways.

Regent's Quadrant Competition.

THE response to our invitation to architects to design a façade for the Regent's Quadrant shows that the subject has attracted many members of the profession with established reputations. We have thought it desirable, therefore, to strengthen the Jury of Assessors by the addition of Mr. William Flockhart, F.R.I.B.A., who has expressed his willingness to co-operate with Mr. Rickards and Mr. Munby. The wide experience of Mr. Flockhart in important street architecture will be well known to competitors, and his presence on the jury will doubtless be appreciated.

MARCONI HOUSE, STRAND.

The premises until recently occupied as the Gaiety Restaurant have been speedily converted for purposes of the Marconi Wireless Telegraph Company. The ground-floor bar is altered into the telegraph office, the old ballroom into the accountant's department; the main restaurant, on the ground level, is modified to accommodate the transfer branch. A wireless installation will be erected upon the roof. The restaurant (upon a site of 10,500 sq. ft.) and the adjoining theatre and Messrs. Short's premises were erected from the plans of Messrs. Ernest Runtz & Ford, the design of the elevation being based upon a sketch design made by Mr. R. Norman Shaw, R.A. The structural alterations throughout the building have been made by Messrs. Trollope & Colls, under the superintendence of Messrs. Dunn & Watson, the electrical light installation being by Messrs. F. Geere Howard, and the telephones and fire-alarms by Messrs. W. G. Hodgson & Co. The Masonic Hall (now the board-room) was decorated by Mr. W. J. Neatby.

THE usual fortnightly meeting of the Royal Institute of British Architects was held on Monday at No. 9, Conduit-street, Mr. Leonard Stokes (President) in the chair.

Mr. H. T. Hare announced the decease of Mr. Peter Kerr, the well-known Melbourne architect, who was for many years a Fellow of the Institute, but resigned a few years ago on retiring from practice; also of Mr. Henry Shackleton, Associate, elected 1906, and Mr. Ernest Theodore Felgate, Licentiate.

Mr. R. A. Cram then read an interesting paper on

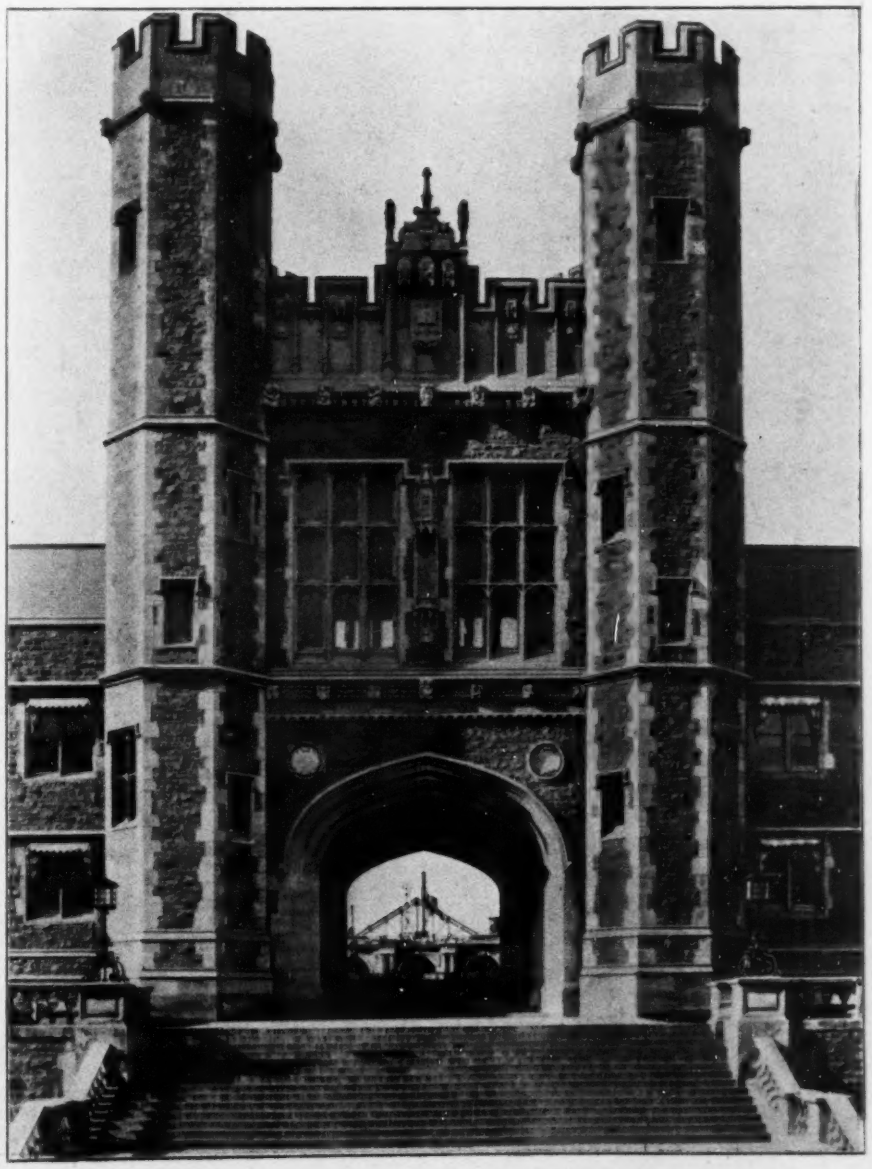
RECENT UNIVERSITY ARCHITECTURE IN THE UNITED STATES.

In the course of his remarks Mr. Cram said:—"The foundations of sane and sound and wholesome society are neither industrial supremacy, nor world-wide trade, nor hoarded wealth; they are personal honour, clean living, fearlessness in action, self-reliance, generosity of impulse, good-fellowship, obedience to law, reverence, and the fear of God—all these elements which are implied in the word "Character," which is the end of education and which is the proudest product of the old English residential college, and the old English educational idea that brought it into being, maintained it for centuries, and holds it now a bulwark against the tides of anarchy and materialism that threaten the very endurance of civilisation itself.

From time to time we have yielded more or less to novel impulses, coquetting with that questionable lady sometimes known as the Spirit of the Age, accepting even her insidious doctrine that, after all, the object of education is not the building of character, but the breeding of intensive specialists, or the turning of a boy at the earliest possible moment into a wage-earning animal. When we stop doing things long enough to think, we all realise that, as the Dean of St. Paul's has recently said, "The real test of progress is the kind of people that a country turns out," and the product of secularised and intensive education is not of a quality that develops a sense either of covetousness or emulation in sane and healthy minds.

We are returning, step by step, to the old ideals and sound methods of English colleges, returning to the mother that bore us, just as we return year after year to our old home for refreshment and inspiration; return even in a wider sense to those eternally battered but eternally enduring principles in life and thought and aspiration which make up the great Anglo-Saxon heritage of which we proudly claim to be joint heirs with yourselves. And in this return we find ourselves recurring once more to the very forms of the architecture—or rather, we hope, to its underlying spirit—through which this great tradition has manifested itself.

In America practically all the XVIIth-century work and nine-tenths of that of the XVIIIth is gone, including much of the best, and we



Washington University, St. Louis, Mo.
Messrs. Cope & Stewardson, Architects.

must recreate our vision of the past from shreds and patches, but fortunately at Harvard there remains a notable group that has yielded neither to vandalism nor conflagration.

The first evidence of decadence appears, I think, in the advent of that more pompous style Jefferson did so much to advance. Hitherto what had been done was done simply and unaffectedly; now came the conscious desire for architecture, which is a dangerous ambition at best. At the University of Virginia we have the original setting out, almost intact, and if we deplore the unnecessarily unreasonable classical porticoes with columns, entablatures, and pediments complete—and all built of pine boards framed up in the semblance of a newly-discovered paganism—we must admit the great dignity of the plan and the singular charm of the ensemble.

This "Jeffersonian" style rapidly took the place of the old Georgian, but its day was brief, and somewhere between 1820 and 1830 occurred that ominous point when the last flickering tradition of good taste and the last weak impulse of instinctive art vanished.

Fortunately there was little collegiate building with us during this dismal second quarter of the XIXth century, or, rather, and also fortunately, little of it has survived, and when first the architect appears on the scene as the mentor rather than the exemplar of public opinion it is in novel guise; nothing less, indeed, than as the protagonist of Gothic. He was not very Gothic, I must admit, and in the beginning he contented himself with a few apologetic and quite casual buttresses, pointed arches over his door and window openings, an octagonal turret or two, and, of course, battlements, usually of 2-in. deal neatly painted, and sometimes sprinkled with sand as a concession to appearances.

It was all a "false dawn," however, and ceased almost in a moment (though for a brief period only, as we shall see) when that great genius and greater personality, Richardson, flashed like an unpredicted comet across the sky. He did great work, some of it immortal work, in his powerful mode, but he died before his mission was accomplished, and though he killed the "French roof style" and the futile Gothic, and all the other absurdities, he left behind no one of his own calibre to carry on the crusade.

It may be well to examine a typical American University, in its setting out, in its component parts, and in its organisation. I will choose for this purpose Princeton, of which I am a member by adoption, and where I have the honour to act as Supervising Architect. The title itself will indicate at once one of the many points of divergence between the English and American systems, for I fancy there is no University in the United Kingdom where one man is given almost complete authority over all matters of the choice of architects, supervision of their work both in design and execution, acceptance or rejection of gifts, and their placing if accepted, the development of roads and paths, and the planting of trees and shrubs. Until recently such an office was unknown in America, but since Princeton took the lead some five or six years ago others have followed rapidly, and the practice has now become an established custom.

It was time, too, that something should be done; as I have already indicated, our colleges are like Topsy, they "just growed," without rhyme or reason, subject to the most vacillating fashion and the quaint whims of emancipated individuals, and the results were generally shocking. At Princeton this growth had been quite lawless, and conditions were even worse at Harvard and Yale. The wide spacing and the lack of co-ordination marks another point of difference; with us almost every college has begun in open country, as an original foundation. We have nothing like Oxford and Cambridge, partly because of this fact, and partly because each college is with us a unit; we have no gathering together of many and independent foundations, loosely knit together for administrative purposes; we have, instead, self-contained units, sometimes of enormous size, and each new benefactor founds not a new college, but a dormitory, a library, a school of law or medicine or forestry or—journalism.

University of Pennsylvania, Philadelphia: Terrace Dormitories.

Messrs. Cope & Stewardson, Architects.

Personally, I think this plan must be abandoned, and a breaking up into more manageable units take place. In the new plan of Princeton the tendency is towards the standard type; here the dormitories are assuming quadrangular form, and in time may become full residential colleges, each with its common-room and great hall, and, when times have still further changed, its chapel.

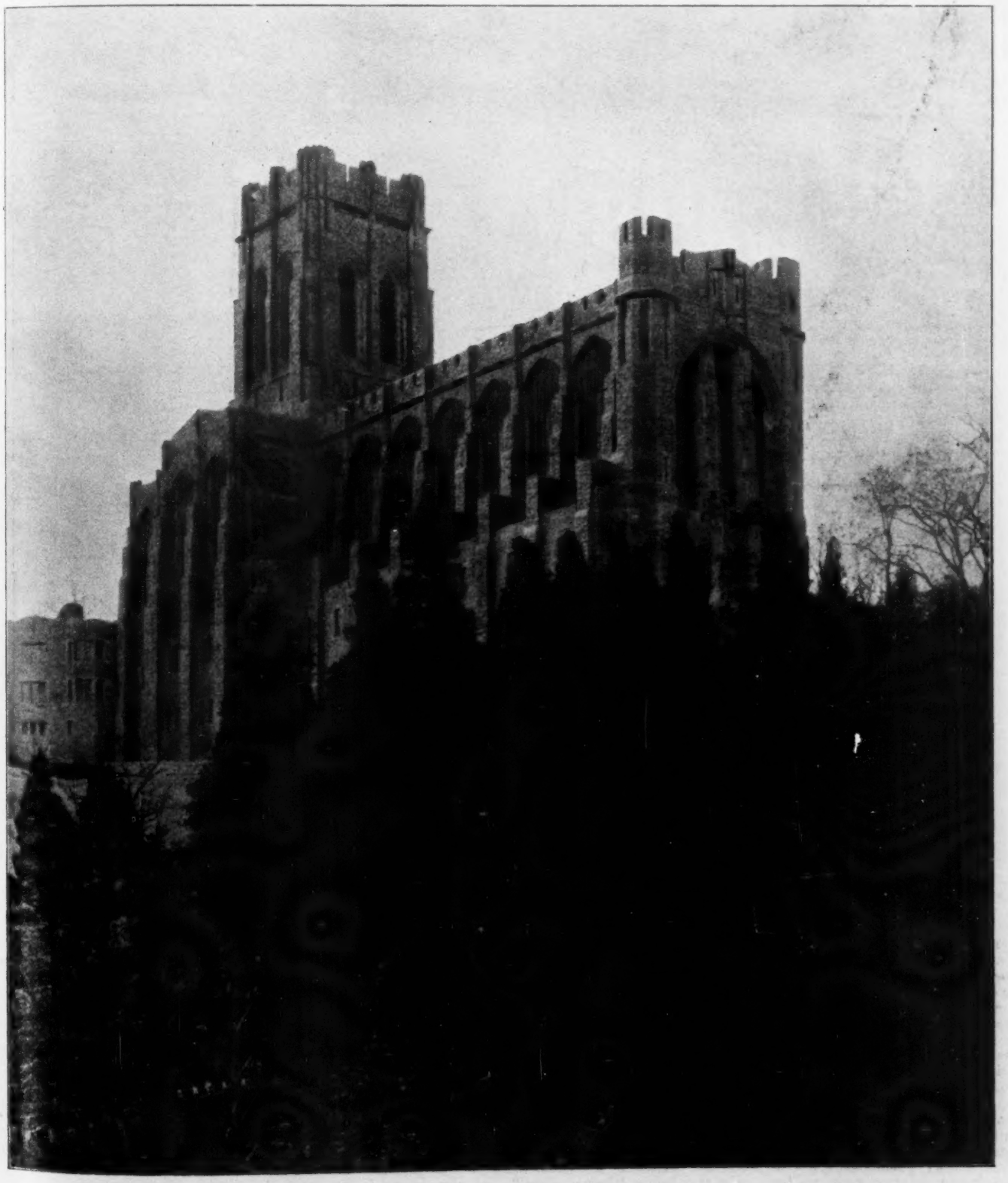
Another thing that will strike you is the magnificence of our gymnasiums and the dominating quality of our schools of science. Then we have general physical directors, as well as special trainers for the varied forms of athletics, and in many colleges regular and searching examinations of the men for physical and functional weaknesses, and as a result the health of our schools is well above normal. As for our science buildings, you know, as we know, only too well, how almost unbalanced we have become in our devotion to practical and "vocational" training, and how obsessed we have become with the mania for natural science. Here at Princeton there is less of this than elsewhere, but two of our newest and most magnificent buildings are devoted, the one to biology, the other to physics, though as yet we have no schools of mechanical and electrical and mining engineering, as happens so often elsewhere.

One novelty you will not notice at Princeton, and that is the clubs and fraternities. We have as many "Greek Letter Societies" (which are very awful and very secret organisations) as we have colleges, and there are some institutions in America where these fraternity houses almost outnumber the academic buildings themselves. At Princeton no Greek Letter Societies are allowed, but there are two old secret organisations, the Whig and the Clio, whose white marble mausoleums form the very centre of the campus, while to the east stretches a great street absolutely lined with the private clubs which grew up when the fraternities were taboo. These clubs take in only a certain number of new members each year, they are distinctly aristocratic in their tone, though aristocratic of a sound and healthy type, and they generally follow the lines of an old and palatial country house.

From all these points of difference you will see then that our American University is a very different matter in its architectural form to those in this country. Our newest Graduate Colleges come nearer, as the now rising buildings for Princeton testify.

In the meantime let us examine the beginnings of what has been a notable Gothic Renaissance amongst our colleges. Cope and Stewardson's work at Princeton set the pace, however, and so beautiful was it, so convincing as to the possibilities of adapting this perfect style to all modern scholastic requirements, the University authorities, with a wisdom beyond their generation, passed a law that for the future every building erected at Princeton should follow the same general style.

Columbia University in New York—the old King's College of Colonial days—stands, of course, as the noblest type of the pure classical idea, and its majestical Library will always remain a national monument. Unfortunately,



Chapel: U.S. Military Academy, West Point, New York.

Messrs. Cram, Goodhue, & Ferguson Architects.

Post Headquarters: U.S. Military Academy, West Point, New York.

Messrs. Cram, Goodhue, & Ferguson, Architects.

the site is crowded and fatally restricted; the mistake was made of fixing this—when the change was necessary a generation ago—too near the outposts of the advancing city, which, like a conquering army, has already swept up to its gates and miles beyond.

There is little else that is purely classical amongst our Universities, though Carrère & Hastings have built a most engagingly Parisian Alumnæ Hall at Yale, the Naval Academy at Annapolis is strictly French, and the University of California is growing on scrupulously Beaux-Arts lines afar on the Pacific Coast. Harvard is conscientiously following the Georgian manner, and so is Williams, where we ourselves are trying to show we have no hard feelings by building a Commencement Hall, and a new quadrangle, in this quite characteristically American style. Georgian also, with rather quaint Roman elements, has been used by McKim, Mead, & White for the vast War College at Washington, and altogether it is, as we say in our colloquial way, giving Gothic "a run for its money."

The University of Pennsylvania shows still more of Cope & Stewardson's wonderful work, though here it is couched in an extremely rich Elizabethan vernacular. Bryn Mawr is built of the wonderful stone that underlies all Pennsylvania and New Jersey, putting a premium on good architecture. Here in England all building stone is finely dressed, but in America we have adopted the practice of using "ledge stone" for our ashlar, our trimmings only being tooled. Fortunately, we have a wide variety of singularly beautiful stones, ranging in colour through all shades of grey, brown, purple, and tawny, easily obtained, inexpensive, and durable. In a way, I think we gain a richness in colour and texture that is obtainable in no other way, while we also acquire something of that effect of age, which is, after all, so essential a part of architecture.

Good Gothic is encroaching steadily on the preserves of Classicist, Boulevardier, and Colonial, and this in spite of the fact that, with the single exception of Harvard, every one of our schools of architecture absolutely disregards every type and phase of Gothic, both in design and in theory. Of course, it can't quite be suppressed in history and archæology, but it is treated rather as the madcap escapade of a callow youth, and passed over as lightly as possible. In spite of this, architects do appear

who love Gothic, and what is more, know about it also. Religion clamours for it, education annexes it, and at West Point the Government of the United States itself accepted it with alacrity, and has found it not half as bad as it looked. I cannot begin to give you any idea of the extravagant beauty of the site of West Point. It is like the loveliest part of the Rhine, only bolder and more dramatic. Mountains rise from the river on either hand, deeply forested —Storm-King and Dunderberg lifting highest of all—and on a narrow plateau, 150 ft. above the river, stands the Academy, its buildings forming a rampart along the cliff, and creeping up the mountain sides all around. Of course, there wasn't anything one could do there except Gothic—of sorts—though others had thought differently, as one who built there a lovely pagan fane like a dream of Imperial Rome. Moreover, most of the old work was pseudo-Gothic, and it had made a tradition, so it was not startling, after all, that our classical Government should have endorsed a Gothic school.

I am not sure they got it. I think the chapel on its crag, dominating the whole group, would pass, though it surely is not archæological; the site is compelling, however, and really what we tried to do was to translate the rocks and trees and ribbed cliffs into architectural form. Just what the cavalry and artillery buildings may be I don't know, nor does it much matter; they are an attempt to express outwardly their function, and in the simplest terms; the stables sweep in an enormous arc around one side of the cavalry plain, and at the back, against the towering hills, are the barracks, one for each branch of the service. The riding-hall is no more architecturally than a rampart of rock, heavily buttressed, and 600 ft. in length.

I think of the finished buildings the post headquarters is not the least interesting. It is built on the edge of the cliff, and the entrance by the base gate is four stories below the main court, which is entered from the upper level. It is a pretty big building, but it is wholly occupied by the administration of the Academy. Not only the buildings at West Point, but practically all the other works I have shown you as well, are all real masonry; no steel frame skeleton clothed indifferently with a veneering of masonry. We do, indeed, indulge in skeleton construction, and reinforced concrete and other structural expedients and substitutes, but deep in our racial consciousness, as in that of all other Anglo-Saxon peoples, is the solid conviction that, after all, there are but three real things in the world—the home, the school, and the Church—and that when we are dealing with eternal verities honest and enduring construction is alone admissible. And it is to the same consciousness I think that we may attribute the very universal return to Gothic of some form for our churches and our colleges and our schools. We have not hammered out our own intimate style, or national and contemporary architecture, any more than have any other modern races and peoples, but this will come by-and-by. At present we architects are, I conceive, no longer as in the past the mouthpiece of a people, creating the visible form for a great dominating social impulse that is the mark of supreme civilisation; rather are we the voices crying in the wilderness, the pioneers of the vanguard of the new life, the men who recreate from antiquity the beauty that is primarily educational, that so it may work subtly through the consciousness of those who come under its influence, slowly building up a new civilisation that, when it has come full tide, will burst the shell of archæological forms, and come forth in its new and significant and splendid shape.

We have not now, nor have had for three centuries, a civilisation that demanded or could create such artistic expression, but the light is already on the edges of the high hills, and we know that a new dawn is at hand. In the meantime, like the monks in the dim monasteries of the Dark Ages, we cherish and conserve all that was great in our greatest past, building as well as we may new Oxfords and new Westminster Abbeys, new Lincolns, new Richmond Castles, new Haddon Halls, not as the last new word in architectural expression, but as schoolmasters and as prophets, content with the educational work we are accomplishing, leaving to our successors the equal but not more honourable task of voicing in novel and adequate form the new civilisation we are helping to create."

Mr. E. Warren

said it was always a pleasure to meet an architect who came from a friendly country to instruct them, and as in this instance when a gentleman came from America, which he refused to regard as foreign, the pleasure was doubled. He presumed that he was honoured by being asked to propose a vote of thanks to the author, because a little while ago he tried to interest them in the evolution and development of collegiate architecture in England. It seemed a far cry from the old brown buildings of Oxford and Cambridge to the new examples scintillating under the American light which Mr. Cram had shown them, and at first they felt a little bit bewildered by the flights of fancy in a scholastic direction which they had seen; but it was with a certain sense of "titivation" to their insular pride and satisfaction that they had seen the English idea of the quadrangle and the sense of antiquity predominating in these examples. They congratulated Mr. Cram on a brilliant and interesting paper and on the treatment of magnificent opportunities. Anything more superb than the site he had had to deal with at West Point it would be difficult to imagine, and they congratulated Mr. Cram on the way he had handled that opportunity. But the opportunity did not make the man; it was the man who made the opportunity. Mr. Cram would not mind if he said that cherishing the ancient things they possessed in this country they were interested to observe a reflex of the various forms so familiar to them in the unaccustomed surroundings and light of America. He had never had the opportunity of making acquaintance with these buildings except by seeing photographs and by hearsay, and at such a late hour he would confine himself to merely proposing the vote of thanks.

Sir Aston Webb,

in seconding the motion, said it was impossible to exaggerate the debt they owed to Mr. Cram for coming to England and bringing such a splendid enthusiasm and showing them what they were doing in the way of building Universities in the United States. He endorsed what Mr. Warren had said as to the splendid way in which Mr. Cram had dealt with the opportunities he had had. They were all immensely struck with his magnificent building at West Point. The author had brought with him a certain amount of Gothic enthusiasm which reminded some of them of many years ago when they were Gothic enthusiasts themselves. He was not sure that he was not so still. It made them still feel young. At the same time, they had tried to think that "styles" did not matter, and that "style" was the only thing which did matter, and one was inclined to think with Ruskin when he said that it did not matter whether a man took three months to paint a single petal of a flower or whether he covered a palace front with colour in a single day so long as he did it with sincerity and whole-heartedness. One was inclined to think perhaps with regard to these University buildings that the style did not matter so much as long as the man who built them did so with sincerity and wholeheartedness and with the enthusiasm which Mr. Cram had and thought they should all have. Oxford and Cambridge were full of other things than Gothic. Perhaps there was more "other" than Gothic, but the whole effect was satisfying. They would ask Mr. Cram to take over to America their best wishes and their belief that when these Universities had been touched by the hand of time they would vie with those of this country.

The Chairman,

in putting the vote of thanks, said he would like to add a personal word of thanks. He had recently been to the States, and the kindness which was heaped upon him was almost overwhelming. He went more or less as their President, and, at any rate, their colleagues in America would not let him go anywhere except as President of the Royal Institute of British Architects. They showered honours on him as the representative of the Institute, and he would like the members to show how much they appreciated the kindness shown to him as their representative in a semi-official capacity. He had had the advantage of seeing some of the buildings which had been reproduced on the screen, and particularly those at West Point, but he felt that the photographs did not adequately represent either the beauties of the site or of the buildings. The situation at West Point was superb and the buildings added to the natural beauty. Mr. Cram had been somewhat hampered by the buildings already existing, some of which were good and others not so good; but the work his firm had done was really splendid, and they were bringing the whole composition together in a magnificent way.

The motion having been carried,

Mr. Cram

said he was unable to express either his appreciation of the privilege they had granted him in asking him to come and talk about some of the work they were doing in America or his even deeper appreciation of the unfailing kindness and consideration which had been shown his compatriots and himself whenever any of them were fortunate to be able to cross the Atlantic, which, after all, was a mere geographical expression separating two peoples who were essentially in all their principles of the past, the present, and the future absolutely one people.

The President announced that the next meeting would be an extra one on June 3, when Mr. W. Woodward would read a paper on "The Newer Responsibilities of Architects."

THE BOARD OF ARCHITECTURAL EDUCATION.

The Board of Architectural Education of the Royal Institute of British Architects announce that the designs submitted by the following students, who are qualifying for the Final Examination, have been approved:—

Subject I. (*a*)—A large Monument to Commemorate King Alfred's Refounding of London: Messrs. H. A. Dod, Hal Harper, Ernest Prestwich, and H. C. Bradshaw.

Subject I. (*b*)—A Terrace of Five Houses: Messrs. R. F. Dodd, Walter E. Woodin, S. Stevenson Jones, and W. Harding Thompson.

Subject II. (*a*)—A large Monument to an Explorer: Messrs. H. Lidbetter, R. S. Dixon, F. O. Laurence, F. A. Broadhead, R. Duckett, E. F. Bothwell, C. M. McLachlan, W. E. Woodin, R. A. Barber, and J. O. Cheadle.

Subject II. (*b*)—A Cloister with External Entrance Gateway or Tower to a Collegiate Building: Messrs. H. A. Dod, H. C. Bradshaw, and E. Prestwich.

THE OLD GENERAL POST OFFICE:

A NEW SUGGESTION.

BY WILMOT CORFIELD.

IT comes as a shock to Londoners to learn, through Mr. W. W. Benn, representing the First Commissioner of Works, that the old General Post Office buildings in Aldersgate-street are doomed to early demolition, and that, according to his announcement made recently in the House of Commons, a contract for clearing the site is now under consideration. The *Daily Telegraph* of the 9th inst. (the day that it published this statement) contained also a well-reasoned appeal for the establishment in London of a public postal and philatelic museum on the lines of those already existing in Berlin, Stockholm, and Washington. This appeal was made in the course of a lengthy reference to the annual National Philatelic Congress, recently held at Margate, where the suggestion was made in the course of an address by the present writer for the adaptation of the old Post Office buildings, the historic pile in St. Martin's-le-Grand, so as to serve as the home for the museum, and also, if the terms of the late Mr. Tapling's will permitted it, of the national stamp collection.

In the muniment-room at the General Post Office there already exists the nucleus for a postal museum of unique interest; in the King's Library at Bloomsbury a priceless philatelic collection, the finest in the world. The muniment-room is a *terra incognita* to the general public, the truncated stamp collection is derelict and lifeless. And now the very building of all others which circumstances point to as the ideal one for museum and collection alike is about to pass into the hands of the house-breaker.

The official reason given for the destruction of the St. Martin's-le-Grand edifice is its "prodigality of space." A "new block" is to be erected, and a blow dealt to the architectural charm of the City to be regretted not only by us, but, when we of to-day are gone, by all future historians and students of prints and

other pictures. We know these "new blocks," earth-devouring and stupendous, but lacking in soul, devoid of inspiration, masses of masonry deadening to civic pride in the external aspect of London's thoroughfares.

Both historically and architecturally the old Post Office is worthy of preservation. Its fine halls, its lofty, well-lighted corridors, its generous and gracious air of high ideals and restrained but imposing effect in the massive and cultured design of its main façade are scarcely of the sort which a city and country should willingly consign to oblivion.

The museum must arrive. Its nucleus already occupies much of the cubic space of some "block" somewhere or other to which Londoners have no access. It is actually intended to destroy the ideally spacious in order to erect the cleverly cramped, and then to pour out libations to the Goddess of Economy, while encircling her brows with bays representative of unpoetical utility.

The Guildhall, the Mansion House, and the Bank are left. But Old Newgate is down, Christ's Hospital gone, and now Smirke's Post Office is under sentence of demolition. It was begun in 1824, superseding a previous building used for postal purposes off Lombard-street at the King William-street end, of which nothing remains, which had been the official headquarters of what system existed since the fire of 1666.

The long and splendid tale of the rise and development of the Post Office may not, however, be recapitulated in these pages, and this note of urgent appeal is now sounded in the hope that before it is too late the heavy hand of the destroyer may not descend upon what should be, and might be, the recognised gathering centre for all relics and records of unique interest historically bearing upon the progress of that great department that has so strikingly and pre-eminently made for the betterment of both our domestic and international relations and for the commerce and peace of the world.

ARCHITECTURAL ASSISTANTS OF THE OFFICE OF WORKS.

MR. PHILIP SNOWDEN had no fewer than five questions down on the paper in the House of Commons on Monday night with reference to the Architectural Assistants of the Office of Works. They were all addressed to Mr. Wedgwood Benn, as the representative of the First Commissioner of Works. The first was as to whether it is his intention to see that the desires of all of the class termed Architectural Assistants should be ascertained with a view to placing them upon the established list; and to this Mr. Benn referred the Hon. Member to the reply given on May 6, and which was published in the *Builder* of May 10.

Mr. Snowden then asked whether he is aware that up to and including the year 1903 the class termed Architectural Assistants, formerly Senior Draughtsmen, engaged in his department, performed all the professional duties, and with the ability now expected, of the Assistant Architects, consisting of the charge of one or more contracts, with the preparation of all the design and construction plans directly under the architects; or if he would say what class did perform these duties at this period, seeing that the total number of the class termed Assistant Architects numbered only eight, who were engaged in nearly every instance upon official routine, and that the amount of the architectural work in the department was within 80 per cent. of the total amount at present, but that the total number now is forty-six; whether he is prepared to aver that the professional abilities exhibited in the exercise of these duties by the Architectural Assistants were not equal to those exhibited now by the class termed Assistant Architects; and will he say why since that period numbers of Junior Draughtsmen have been established to take over these duties formerly satisfactorily performed, thus causing grave dissatisfaction to the Architectural Assistants.

Mr. Benn replied that the answer to the first part of the question is in the negative. In reply to the second part, there were thirty-one Assistant Architects in 1903, and now there are forty-nine. Of temporary men there were about 120 in 1903 and now about 216. As regards the third point, the Architectural Assistants have in the majority of cases had the opportunity of competing for permanent posts and have either not availed themselves of it or have failed. With respect to the last point, the establishment has since 1902 been recruited by competitive examination of members of the unestablished staff.

Mr. Snowden's third question was whether Mr. Benn was aware that the titles of the two classes engaged in his department, Architectural Assistants and Assistant Architects, are upon professional grounds one and the same; that the professional diplomas held by both classes are equally distributed, the number of Associates and Licentiates of the Royal Institute of British Architects in the Architectural Assistants class being twenty out of a total of fifty, and that of the Assistant Architect class eighteen out of a total of forty-six; whether he is aware that the services rendered by both these classes are one and the same; and that both these classes are equally certificated, the one class holding the technical certificate of the Commissioners of the Board of Works and the other class that of the Commissioners of the Civil Service; and will he therefore see that the Civil Service rule of equal reward for equal class conditions is in this case observed by establishment and remuneration.

Mr. Benn answered that there are nineteen Associates of the Royal Institute of British Architects among the Assistant Architects and eleven amongst the Architectural Assistants. There are also two Licentiates among the former and twelve among the latter. The Associates and Licentiates were not, of course, upon the same footing. The answer to the third question was in the negative, and to the fourth that the two certificates are not in any way equivalent.

Mr. Snowden inquired if the necessary steps will be taken to prevent the present established architects' staff, termed Assistant Architects, from being increased by the present method by members of the junior unestablished staff, termed Draughtsmen, by examination or otherwise, until the services of every member of the present certificated senior unestablished staff, termed Architectural Assistants, has been fully utilised by establishment and remuneration as those in a similar professional position, classed as Assistant Architects.

To this Mr. Benn regretted that he was unable to give such an undertaking.

Finally, Mr. Snowden asked whether he is aware that the designs and the necessary constructive documents constituting the basis of the building contracts formerly in the sole charge of the class termed Architectural Assistants directly under the chief of the branch is being now taken from them, thus reducing their positions to a subordinate one, and handed over to a class junior to them in age and service, and termed Assistant Architects of the second class; that the resulting friction occasioned by this action is hampering the progress of the work of the department; and will he give instructions that the original express conditions of service in this and other respects of the Architectural Assistants be reverted to.

Mr. Benn said that the question of work has rendered necessary the increase of the permanent staff in order to relieve the architects by devolving a certain amount of the work on the Assistant Architects. No instance of friction hampering the progress of the work of the department has been brought to the notice of the First Commissioner and no instructions are needed for any change in the current procedure.

THE ARCHITECTURAL ASSOCIATION:

FIRST SUMMER VISIT.

PLEASANT conditions favoured the visit, on May 18, to Ottershaw Park, near Woking, a large house by Messrs. Niven & Wigglesworth, situated some twenty-five minutes' drive from Woking Station. The building occupies an old site surrounded by fine park lands and gardens, and so escapes that rawness usual in new creations. The evolution of the present building has followed a course not uncommon in the circumstances. First commenced as an addition of two wings to an existing house, it has ended by the sweeping away of the original building with the exception of a few basement offices and foundations, retaining, however, the general shape and disposition of its rooms, and expanding beyond the first-intended wings on either side as well as upward in the form of a mansard roof not originally intended. A knowledge of these facts of growth is necessary to a right appreciation and judgment of the architects' efforts and their result.

As now completed the house consists of a squarely-proportioned centre block of three stories and a mansard, wings to east and west of lesser height, and single-story extensions beyond these, that to the west being a winter garden and on the east a covered loggia for meals, open only to the south, and easily reached from the dining-room or service-room. The external treatment is a rather severe type of Renaissance, without an Order, emphasis coming from quoins and window-dressings. All the buildings are faced with Bath stone, and there is a freedom from tricks and affectations of detail; the house will gain in effect as it weathers.

The plan is a fine and dignified one and appears also to be excellently arranged for smooth working. Entering beneath a central *porte cochère* on the north front, a broad flight of internal steps conducts the visitor directly to the hall, which is centrally situated on the south front overlooking the terrace gardens. To right and left of the hall are the library and study, both pleasantly-proportioned rooms (about 30 ft. by 20 ft.), with well-studied lighting. A broad corridor on the long axis divides library and study from main and service stairs on either side of the entrance vestibule, and leads to the dining-room at the south-east (with loggia beyond), and the drawing-room at the south-west, parallel with the billiard-room facing northward, both these rooms communicating with the winter garden at a lower level by an ante-room and steps.

The kitchen and offices are on the lower ground floor, and are admirably spacious and well fitted. Beneath the south terrace is a large private swimming-bath, and there is extensive provision for heating and fuel storage.

The first floor has a well-devised plan. Above the hall is the boudoir, on either side of which, facing south, are the bedroom suites for members of the family, each with its bath-room and wardrobe-rooms, the remainder of this floor being devoted to guest-rooms, similarly provided; the upper floors contain further guest-rooms and accommodation for servants.

Excellent design and workmanship are shown in the interior finishings, the dining-room in particular being beautifully panelled in oak with some very fine carving in the Grinling Gibbons manner, and a fibrous plaster ceiling toned with gilding and scumble stain to a most harmonious effect. A fine vista is obtainable through the length of the house—some 190 ft.—terminating in the dining-room fireplace.

The troublesome necessity of external sun-blinds appears to have been very ingeniously solved by Mr. Niven, who was kind enough to attend with the plans and explain the problems and difficulties of the work, and both to him and to Mr. Eckstein for permitting this very instructive visit the members were much indebted.

ARCHITECTURAL SOCIETIES.

The Society of Architects.

The Easter Examinations were held on April 2, 3, and 4, in London, Manchester, Leeds, Cardiff, Birmingham, Oxford, and Dublin, the latter being a new centre. The Council have appointed Mr. A. Alban H. Scott, M.R.San.Inst., Examiner in Section IV., Sanitary Science, in the place of Mr. C. H. Mead, M.R.San.Inst., who has been compelled, owing to continued ill-health, to relinquish the duties. Mr. R. Willock, F.R.I.B.A., Examiner in Section IIIa., was prevented by a serious illness from completing his duties, which were undertaken by the Chairman of the Board of Examiners, Professor Henry Adams, M.Inst.C.E.

The following have satisfied the Examiners:—E. R. Bill, Shrewsbury; W. Bradley, Great Lever, Bolton; S. F. Evershed, Northampton; W. J. Hadley, Carmarthen; H. Lyons, Dublin; H. E. Matthews, Yeovil; D. J. Moss, Peckham Rye, S.E.; H. Phayre, Egremont; G. H. Russell, Hitchin; E. D. Sherlock, Fallowfield, Manchester; R. H. Syms, Isleworth; R. Thompson, Catshill, Bromsgrove; H. A. Wilkinson, Wood Green, N.

The following students of the Society have obtained Sectional Certificates:—Section I. (Architecture)—F. Clemes, Weston-super-Mare; C. Ford Reading; W. J. Isaac, Warrington;

A. B. Johnson, Croydon; P. Morris, Nelson. Section II. (Building)—W. J. Isaac, Warrington; W. E. Kelly, London; L. A. Reynolds, Hull; F. J. Taylor, London. Section III. (Practice)—H. Best, Whitworth; H. J. Lurcock, London; J. Slater, Blackburn; E. J. Williams, Leicester. Section IV. (Sanitation)—J. A. Grimshaw, Accrington; H. J. Lurcock, London; P. Morris, Nelson; C. F. Overy, Weston-super-Mare; J. E. Sanders, Liverpool; J. Slater, Blackburn; F. J. Taylor, London; E. J. Williams, Leicester.

Devon and Exeter Architectural Society.

From the *Proceedings* of the Devon and Exeter Architectural Society we notice that the President, Mr. James Jerman, in the course of his address, said:—

From the widely-spread area of our Society's district it is difficult to bring together, except on very special occasions, a large body of members; much, therefore, must be left to the work of the elected Council. It may, however, be possible in time, and in conjunction with the other allied societies, to issue to every member a journal or report of our proceedings, say quarterly, in order that even the most distantly placed member of the Society may be kept in touch with matters affecting the profession. Probably the Royal Institute may see its way to consider the desirability of promoting the issue of such a publication for circulation between the allied societies on some general basis, and adapted to each locality. It may be said that the Royal Institute of British Architects' *Transactions*, issued fortnightly during the Sessions, include all matters of professional interest. This, however, cannot, and does not, provide a sufficient vehicle of inter-communication to enable the now numerous allied societies to fully publish their doings and set forth their aspirations.

ARCHÆOLOGICAL SOCIETIES.

Royal Archæological Institute.

The summer meeting of the Royal Archæological Institute of Great Britain and Ireland will be held at Northampton from July 23 to 31. On the first date, after a reception by the Mayor and Corporation of Northampton, the Society will visit the churches of St. Sepulchre, St. Peter, St. Giles, and Eleanor Cross at Hardingstone. On the following days visits will be made to Montague's Hospital, Weekley; Broughton House, Jesus Hospital, Bede House, Rockingham Castle, Kirby Hall, Castle Ashby, and various churches in the county. The headquarters of the Institute will be at the Grand Hotel, Northampton.

The British Archæological Association.

The Council of the British Archæologica Association has decided to hold the annual Congress in Gloucester from June 24 to 29. On the first afternoon a visit will be paid to Gloucester Cathedral, where an address will be delivered by the Dean, and in the evening there will be a reception by the Mayor of Gloucester at the Guildhall, and the delivery of the Presidential Address by Mr. Charles E. Keyser. The following days will be spent in the inspection of places of historic interest in Gloucester City and in visits to such places as Berkeley Church and Castle, the Saxon Church and the Chapel of Odda at Deerhurst, Thornbury Church and Castle, and Winchcombe Abbey.

ENGINEERING SOCIETIES.

The Society of Engineers (Incorporated).

The third annual dinner of the Society of Engineers (Incorporated) was held at the Criterion Restaurant on May 11, Mr. John Kennedy, the President, being in the chair. The company included Sir Maurice Fitzmaurice, K.C.M.G., Chief Engineer to the London County Council; Mr. Alexander Siemens, Past-President Inst.C.E.; Mr. H. P. Boulnois, M.Inst.C.E., Chairman of the Royal Sanitary Institute; Mr. William Clarke, M.Inst.C.E.; Mr. J. W. Wilson, M.Inst.C.E., M.I.Mech.E.; Mr. Arthur Valon, A.M.Inst.C.E., Vice-President; Mr. D. B. Butler, A.M.Inst.C.E., Hon. Secretary and Treasurer; Mr. A. S. E. Ackermann, B.Sc. (Engineering), A.C.G.I., A.M.Inst.C.E., Secretary.

The loyal toasts, proposed by the President, having been honoured, Sir David Gill proposed "The Society," to which the Vice-President responded. The toast of "The Ladies" was proposed by Mr. J. W. Wilson, and acknowledged by Miss Siemens.

GENERAL NEWS.

The Royal Institute of British Architects.

The photographs and drawings brought over by Mr. R. A. Cram, the eminent American architect, to illustrate his paper on "Recent University Architecture in the United States," read before the Royal Institute of British Architects last Monday, will be on view in the Galleries of the Royal Institute, 9, Conduit-street, W., until Saturday, June 1. Admission on presentation of visiting-card.

Board of Architectural Studies, Cambridge University.

The general Board of Studies recommend the establishment in the University of a Board of Architectural Studies with the objects of organising the teaching of architectural subjects in the University, framing lecture lists for inclusion in the lists of lectures published by the General Board of Studies, and admitting students to courses of research in architecture. The new Board will include the Disney Professor of Archæology, the Slade Professor of Fine Art, the Professor of Mechanism and Applied Mechanics, the Reader in Classical Archæology, four members of the Senate, and two members nominated annually by the Board.

Royal Academy of Arts.

Mr. William Llewellyn, who has just been elected an Associate of the Royal Academy, was born in 1863, and has been a regular exhibitor in the Royal Academy rooms, mainly of portraits, during twenty-five years past. He entered the Kensington Training School in 1881, when Sir Edward Poynter, P.R.A., was Principal, and then studied at Paris, in the ateliers of Julien and Ferdinand Cormon. He is a member of the Society of Twenty-Five Painters and the Royal Society of Portrait Painters.

London Institution.

In furtherance of the scheme already adverted to in our columns the Board of Education have framed a Bill, to be introduced in the current session of Parliament, for vesting in H.M.'s Commissioners of Works the property and buildings of the London Institution, Finsbury-circus, E.C., as incorporated by Royal Charter of January 21, 1807, and for their use for purposes of the contemplated School of Oriental Languages. The Government will make compensation to the present proprietors, and will give a grant of from 20,000*l.* to 25,000*l.* for alterations of the premises and an annual subsidy of 4,000*l.* for maintenance.

"Shakespeare's England," Earl's Court.

For the exhibition that was opened last week at Earl's Court some models of old buildings have been made by Mr. E. Lutyens. Amongst the typical buildings represented are—in the Ducal Hall—Shakespeare's house; St. Mary's Church and Ford's Hospital, Coventry; the Windsor Cloisters; Ledbury Hall; and the old house, *temp.* the Commonwealth, of Dixter. There are also reproductions of the Fortune Theatre, London; Queens' College, Cambridge, and St. John's College, Oxford; Rushton and Compton Wynyates; Ockwells; Salisbury Cross; and some of the houses in Stamford. In the lake is a model of the *Revenge*, built under the superintendence of Mr. Seymour Lucas, R.A.

Spitalfields Market Improvements.

A Committee of the House of Lords, under the presidency of Lord Bristol, have found the preamble as proved and have ordered to be reported to the House for Third Reading the Bill promoted by the Stepney Borough Council in respect of the Spitalfields Market area. The Bill requires the Corporation of the City of London to carry out certain improvements in and about the market area whereof, in pursuance of an Act of 1902, the Corporation acquired the freehold; that Act also empowered the Corporation to acquire within ten years the leasehold interests in the market held by Mr. R. Horner. The Corporation had neither obtained possession nor proceeded with the improvements; the Borough Council contend that the obligation to make the improvements is distinct from the acquisition of the market for its transfer to the Borough Council.

The Wertheimer Art Sale.

The collections of the late Mr. Charles J. Wertheimer, of Norfolk-street, Park-lane, W., who died on April 25 last year, have just been dispersed at Messrs. Christie's rooms. The principal lots included several old French clocks, of which two—a Louis XIV. clock, 32 in. high, in a drum case of tortoiseshell, with bronze figures of Venus and Cupid, and a Louis XVI. clock, 22 in. high, in a case in the fashion of a celestial sphere, overlaid with lapis-lazuli plaques—were bought by Mr. Asher Wertheimer for 2,700 guineas and 2,500 guineas respectively. M. Jacques Seligmann, of Paris, purchased, for 13,000 guineas, the suite of gilt carved wood settee, bergère, and six fauteuils, having their seats, backs, and arms upholstered in old Beauvais tapestry with Boucher designs, and a Savonnerie carpet, 25½ ft. long by 16½ ft. wide, woven with a floral pattern in polychrome upon a black ground, was sold for 2,600 guineas (Lenygon). The two days' sale of 164 lots realised 92,463*l.*

Israels at the French Gallery.

Messrs. Wallis & Son, who, by the way, are plaintiffs against the United Service Club in an ancient lights action, have opened a Memorial Exhibition of the pictures of Joseph Israels, Hon. R.A., who died at The Hague last year. Some of the paintings are old favourites, such as the eloquent "Grace Before Meal" and the realistic "Scribe." One is struck by the likeness of such early works as "The Bather" and "Meditation" to the ideals of Etty, while the dignity and technique of "Après la Messe," a portrait of great intensity, reveals the origin of the designation of Israels as "the Jewish Rembrandt."

COMPETITION NEWS.

Hale Town-Planning Competition.

The Council of the Manchester Society of Architects have been informed that the District Council of Hale have reconsidered their decision, and have agreed to revise the conditions in respect to the points alluded to in our issue of May 3 (p. 513), namely, to issue a plan of the district for the competitors, with particulars up to date of houses, sewers, and main levels; to delete the clause in their conditions asking for the architect's inclusive fee for subsequent work; to appoint a competent advisor, to be approved by the Council of the Manchester Society of Architects, to assist the Committee; an extension of time for sending in plans will be given. The Council of the Manchester Society have intimated to their members that these conditions, as revised, are satisfactory. The restriction issued previously therefore has been withdrawn.

Model Colliery Village, Glamorgan.

The idea of promoting a competition for a model village in the Ely Valley, between Llantrisant and Tonyrefail, was excellent, but we fear the result will not fulfil the expectations of those concerned. This is a pity, for the competition, under good conditions, might have produced interesting suggestions for dealing with a topical problem. Briefly, the Welsh Navigation Steam Coal Company ask for a scheme for a model colliery town and offer a premium of 20*l.* But as the adjudicator (whose decision is final) is the Chairman of the company, unsupported, it seems, by any professional advice, and as "all the plans, estimates, etc., forwarded to the company will become its property," no architects of repute are likely to respond to the invitation to compete.

School at Greenock.

For the new school in the West-end of Greenock Mr. William R. Glen, of Glasgow, has been appointed architect. The design of Mr. Peter Caldwell, of Paisley, was placed second (40 guineas premium), and that by Mr. James Rome, of Kilmarnock, third (30 guineas premium).

Baptist Chapel, Bedford.

In a recent competition, for the Russel Park Baptist Chapel, Bedford, the designs submitted by Messrs. George Baines & Son, 5, Clement's-inn, Strand, W.C., were placed first, and the firm have been appointed architects for the scheme.

Church, Schools, etc., Mansfield.

The limited competition recently held for U.M. church, schools, institute, and caretaker's house, in Nottingham-road, Mansfield, has been settled in favour of Messrs. George Baines & Son, 5, Clement's-inn, Strand, W.C., and the first section of the scheme, estimated to cost about 4,700*l.*, is to be proceeded with at once.

Art Gallery and Museum, Belfast.

The Belfast Corporation have decided to erect an Art Gallery and Museum on a site in the Botanic Gardens Park, which is a public park situated in the southern district of the city, and adjoins the grounds of the Queen's University. The Local Government Board have made an order authorising the appropriation of the portion of the park for the purpose indicated. The Corporation have acquired an additional 6 acres of ground adjoining for park extension purposes. The site for the proposed Art Gallery and Museum is 1 acre and 14 perches in extent. It has a frontage of 170 ft. to the Stranmillis-road, which bounds the park on the eastern side. The matter is in the hands of the Library and Technical Instruction Committee, who purpose inviting competitive designs, but their arrangements are not yet sufficiently advanced to be made public.

BOOKS.

Columns and Struts: Theory and Practical Design. By WILLIAM ALEXANDER, M.Inst.C.E. 101 illustrations. (London: E. & F. N. Spon, Ltd. 1912. Pp. 267. 10s. 6d. net.)

THIS treatise deserves more than ordinary attention because it is written by an engineer of considerable practical experience in the design of large struts, and who is consequently able to deal with various practical matters which cannot be discussed with like authority by a purely theoretical writer.

For columns, struts, or stanchions of small dimensions employed in building construction refinements in theoretical calculations are unimportant, as members of the kind usually consist of rolled sections, the safe loads for which have been ascertained by actual tests.

In built-up columns, however, the theoretical section can be more closely attained by the selection and combination of different bars. The larger the member the more closely can theoretical requirements be approached and the more necessary it is to inquire into the reliability of theories or formulæ.

Chapter II. is an analysis of various existing formulæ and is welcome as an additional reminder of the limitations attaching to the many empirical or semi-empirical formulæ that have been put forward for the design of columns and struts.

In succeeding chapters the author investigates the mechanics of column and strut phenomena on lines somewhat different from those usually followed. The true relations between load and deflection are demonstrated and the resulting equations are based upon the permissible amount of deflection, which in turn is determined from the permissible fibre stress intensity.

Comformably with this treatment the character of the web stresses is shown, and their values are determined directly from the equations to the curves of deflection, instead of being computed from an imaginary transverse load, in accordance with customary practice.

The author deals later with the influence exercised by the form of the cross-section of a strut on its strength, and discusses in detail the efficiency of various familiar sections from the same standpoint. The practical equations derived from this investigation make due allowance for sectional form in a manner that obviates the need for the usual empirical constants.

Chapter XI. includes the discussion of columns, the section of which is not uniform from end to end, but tapered continuously or reduced in steps. The general effect of tapering is indicated, and a number of practical matters are discussed.

Chapter XII. is devoted to a detailed consideration of the struts which were the first to fail in the Quebec Bridge, a part of the book that will thoroughly repay perusal.

In the final chapter we have a summary of the equations required for practical design and a number of problems worked out so as to illustrate the correct application of the formulæ.

As may be judged from what we have said, this work is by no means a primer for the student, but rather a treatise for the practical structural engineer, who will find it a serviceable addition to previous writings on the same important subject.

Engineering Work in Public Buildings. By R. OWEN ALLSOP, architect. Seventy-five illustrations. (London: E. & F. N. Spon, Ltd. 1912. Pp. 158. 12s. 6d. net.)

THIS book deals with power, lighting, heating, ventilation, and water supply installations in public institutions and other large buildings, and should be appreciated by architects who may have occasion to deal with such matters. It would be impossible to discuss these subjects in a manner satisfactory from the engineer's standpoint within the limits of the present volume, but Mr. Allsop, as an architect himself, has shown just appreciation of the kind of information required by members of his profession. The volume is written on broad lines, is well illustrated by line drawings, and has a useful index.

The Theory and Practice of Heating and Ventilation. By A. H. BARKER, B.Sc., B.A. (Lond.). (London: The Caxton Press. 1912. Pp., text, 740; appendix, lxxvi.)

SINCE the historic treatise of Hood was gradually rendered obsolete by modern developments in the practice of heating and ventilation, there has existed in the United Kingdom much need for a really comprehensive work on that branch of engineering.

We gladly welcome the enclopædic volume written and compiled by Mr. Barker, who possesses the special qualifications given by practical experience as a heating and ventilating engineer, in addition to those afforded by scientific training.

The object of the work is to give a detailed explanation of the application of scientific principles to the problems with which the heating and ventilating engineer is confronted, and to point out the limits within which these principles can be practically applied.

Apparent discrepancies between theory and practice are more noticeable and more difficult to account for in heating and ventilating than in most other branches of engineering. For this reason a full recognition of the limitations affecting the application of theory is almost as necessary to thorough understanding of the subject as knowledge of the principles involved.

Instead of blindly accepting the conclusions drawn from experimental and theoretical investigation as directly applicable to the solution of problems, the author has critically examined the applicability of scientific principles in the light of practical experience.

Those who have had experience are fully aware that the problems arising in heating and ventilation practice are as elusive and difficult of accurate solution as any with which an engineer may be confronted. It is scarcely possible to explain intelligibly and correctly the application of fundamental principles to the solution of such problems except in a manner which assumes that the reader possesses a certain amount of scientific knowledge.

Therefore, in the earlier part of this book, Mr. Barker gives a *résumé* of the principles with which the reader is supposed to be familiar, and this serves the part of an introduction to the chapters devoted to applications of the principles. It may be remarked here that the author has not attempted to describe practical details of construction or the mechanical work involved in the installation of apparatus.

To convey in a few words the scope of the treatise, we give the following brief survey of its contents.

In Chapters I. to IV. are discussed the properties of matter, motion, energy, heat, air, water, and steam. Then, after a chapter on the flow of liquids and gases, come six chapters on ventilation, the first of the series dealing with hygienic considerations and the others with the movement of air and the calculation of quantities in ventilation. Next we have six other chapters, constituting a group devoted to heat transmission, methods of supplying and distributing heat, the emission of heat from radiating surfaces, and the temperature maintained in a building. After these chapters the subjects taken up include boilers and chimneys, methods of heating and humidifying air, the design of pipe installations, various systems of heating buildings, and the testing of heating and ventilating plant.

At the end of the volume is an appendix containing a large collection of useful tables and memoranda.

The general conception of this work and the manner in which the idea has been realised leave nothing to be desired. If fills a long-felt gap in technical literature, and will undoubtedly be accepted with gratitude by the professional and commercial classes who are directly interested in the theory and practice of heating and ventilation. The labour involved in the preparation of the text and the numerous tables and diagrams by which this is accompanied has obviously been very great, and we cannot help wondering that a man full of professional and commercial business should have been able to spare the time for undertaking so heavy a task, upon the completion of which the author is to be congratulated most heartily.

BOOKS RECEIVED.

THE LAW OF BUILDING, ENGINEERING, AND SHIP-BUILDING CONTRACTS. By Alfred A. Hudson, K.C. (London: Sweet & Maxwell, Ltd. 5s. net.)

SILVERWORK AND JEWELLERY. By H. Wilson. (London: John Hogg. 6s. 6d. net.)

THE MECHANICS OF BUILDING CONSTRUCTION. By Henry Adams, M.Inst.C.E., etc. (London: Longmans, Green, & Co. 6s. net.)

RAMBLES IN THE PYRENEES AND THE ADJACENT DISTRICTS. By F. Hamilton Jackson. (London: John Murray. 21s. net.)

CORRESPONDENCE.

Exhibition of Part of London Competition Designs.

SIR,—With reference to Mr. Quennell's letter, published in your issue of April 19, we notice that no further remarks have been called forth from other competitors. We now beg to suggest that, in face of the difficulty of getting together the majority of the designs submitted, owing to the extensive area from which the designs have been sent, at any rate an exhibition might be organised to show those designs sent in by London and district competitors.

Of course, your correspondents do not suggest that such an exhibition should be held until after the final decision of the assessor.

Premises for the accommodation of such an exhibition could, we feel sure, be secured with comparative facility—possibly the galleries of the Royal Institute of British Architects or those of the Architectural Association, or, if neither are obtainable, there is a chance that the lately re-erected Crosby Hall (Chelsea) might be available for this purpose.

We believe that the governing bodies of either of these institutions and building would be likely to give their aid to encourage a movement the sole aim of which would be to benefit the profession in general.

ARTHUR E. MAXWELL.
C. ORLANDO LAW (Lic.).

The R.I.B.A. Elections.

SIR,—Regularly with the advent of the Royal Institute of British Architects' Council and Committees' election each year there appear in the columns of the professional Press pathetic letters from gentlemen asking for instruction and help in filling up their papers. Such a one has appeared within the last fortnight, reiterating the same old complaint in the following terms:—

"The time will soon arrive again when the members of the Institute will have to elect their representatives on the Council and various Committees for the coming year, and, bearing in mind the difficulty the average member has in deciding for whom to vote, I venture to inquire if something cannot be done to assist him in his selection.

I think I am safe in saying that to most members many of the candidates—particularly new ones—are comparatively, if not quite, unknown, or, if known, their ability, experience, and work are not. It must be remembered that the architect gains his knowledge of his professional fellows chiefly by means of the building journals and the various particulars of buildings they publish; now there are many men of large practice whose names never seem to get into print, and whose drawings are never published; it follows, then, that these men are probably unknown to their brother architects, and when, as sometimes happens, they are listed among the candidates, they invariably fail to receive sufficient support for election, notwithstanding that their experience is far greater than many of those who do manage to gain a seat."

May I, Sir, offer the suggestion to distressed voters that the careful and regular perusal of the accounts of the business meetings published in the Royal Institute of British Architects' *Journal* would prove a much greater help in selecting candidates than the mere haphazard

voting for a member because he happens to have a penchant for seeing his work continuously illustrated in the professional journals?

I think that many, both on the Council and off, must agree with the entire truthfulness of the statement above quoted, and I am convinced it is a matter which should be inquired into with a view to adopting some procedure more satisfactorily to meet the needs of these progressive days. I believe there exists an almost unanimous feeling against individual canvassing in a body such as ours, but this does not prove the case pro or contra. In the case of Parliamentary candidates (I think I am right in saying in other of the professions, closed and otherwise) canvassing is adopted as a matter of course, without—where everyone is on the same footing—any great harm ensuing.

The writer of this letter is also a candidate, but in this case he desires carefully to retain his anonymity, and therefore signs himself

MEMBER, R.I.B.A.

"A Piccadilly Blunder."

SIR,—Under this heading in the leading article of the *Builder* of May 17 you publish a statement concerning the occupier of the corner premises, next to the Piccadilly Hotel, which tends to seriously aggravate the annoyance to which Messrs. Denman, the building owners, and myself, whilst acting for them, are subjected, by reason of the unavoidable necessity on their part of reinstating their premises, which you think right to describe as a hopeless blunder and an eyesore.

You state that you understand the decision to rebuild the old front has been arrived at owing to the fact that the occupier considers a repeat of the hotel gable would be quite unsuitable for the purposes of his business, and you further state that had the matter been rightly handled some arrangement could have been arrived at which would have given the occupier a reasonable elevation suitable to his purpose.

Messrs. Denman have not refused to repeat the hotel gable; on the contrary, they agreed to the completion of the hotel being carried out by the hotel company, and they permitted their own building to remain at a standstill in a half-demolished state for eleven months to enable arrangements between the Crown authorities and the hotel company to be completed. Such arrangements however failed.

Messrs. Denman then offered to erect a new building for themselves designed with a slight modification of the hotel architecture; this design was acceptable to the Crown authorities, but could not be carried into execution on account of certain concessions having been granted by the Crown to the hotel company, whereby the consent of that company became necessary, and which consent the Crown were not able to obtain.

These facts should show that Messrs. Denman have done all that they possibly could to avoid breaking up the continuity of the desired architectural treatment of this part of Piccadilly. Their efforts have resulted in nothing but delay with their own building, and heavy costs to themselves for useless negotiations which were beyond their power to conclude successfully.

As this matter has attracted so much public notice, particularly in the West-end of London, I think you will agree that you cannot do otherwise than publish this letter in fairness to my clients and to myself.

WILLIAM A. HASKINS.

Lighting by Air-Gas.

SIR,—I had my attention drawn to your article on the above subject in your issue of April 26, and I should have written at once to protest against some of the statements made in that article, particularly to the table of comparative costs, wherein acetylene is put down at 1s. 3d. and air-gas at 1½d. I was, however, informed that others were writing you, and so I waited to see what might be said by others.

In your issue of May 10 you have published an extremely moderate letter from the Acetylene Publicity, Ltd., who have, in my opinion, understated the case for acetylene.

You state in your footnote that the table of costs in your original article was supplied by a named firm, and you practically suggest that in such cases tables of costs must be taken with a grain of salt. That is what we have always done and what we have believed the public have done with regard to the wild statements which have recently been made as to the cost of air-gas. You, however, in your footnote contradict the statement made by the Publicity Company as to the price of carbide. The Publicity Company tell you in their letter that carbide costs 1½d. a pound, and you for some reason say that it costs double that sum.

Now, Sir, this Corporation imports and sells between 4,000 and 5,000 tons of carbide per annum, and I have to inform you that carbide at the present moment is at a higher price than it has been for several years, and yet we sell in 1 cwt. lots at 14s. per hundredweight, and when purchased in 4 cwt. lots and upwards—as is always the case where a house of even twenty lights has to be lit—the price is 13s. 6d. per hundredweight. This price, you can readily see for yourself, works out at less than 1½d. per pound. Further, the carbide is sold to the small trader at a price which enables him also to supply his local customer at the prices I have named.

Therefore, in obtaining the data upon which you base your statement that carbide is 3d. per pound, I can only assume that you must have bought a pound tin of some specially doctored carbide used for some patent cycle lamp, which, of course, is not the carbide which is used for serious lighting schemes.

The figure, therefore, at which acetylene must be taken is 6d. and not 1s. 3d., and this 6d. represents acetylene burnt in a flat flame. Now, Sir, in your table of costs, coal-gas burnt as a flat flame is put down at 1s.; coal-gas burnt in an incandescent mantle is put down at 2½d. If the figure were 3d., we could say your article shows that the cost of using coal-gas with a mantle is one-quarter the cost of using coal-gas in a flat flame, and, Sir, the proportion of cost between using acetylene as a flat flame and using acetylene with a mantle is the same as for coal-gas. Therefore, if we use a mantle with acetylene, the 6d. is turned into 1½d., which is exactly the same as the figure given by the particular firm in your article for their own light, which figure, as you will readily admit, has to be taken with a grain of salt. In fact, your table of figures should be as follows:—

	s.	d.
Acetylene, flat flame		6
Acetylene with a mantle		1½
Electric—incandescent	1	2
Flat flame coal-gas	1	0
Duplex oil lamp		7½
Incandescent coal-gas		2½
Air-gas		1½

I do not propose to criticise the air-gas 1½d., but I could prove beyond all question that it is at least 3d. However, all we have ever claimed is that acetylene is equal in price to air-gas—carbide as against petrol and mantles. Where an acetylene plant is installed no repairs or renewals are required for years. Where air-gas is installed the mantles have to be changed very frequently, and it is also necessary to contemplate a new hot-air engine occasionally, and in some makes we have known a hot-air engine to be worn out and require renewal inside the first twelve months. We do not very extensively use the mantle with acetylene for domestic purposes, because we find that a 100-candle-power light, such as the air-gas people give as the standard of comparison, is never required in domestic lighting, and herein lies one of the chief advantages of acetylene as against air-gas. The air-gas light is a fixed standard light, and, even if it is a small passage or a lavatory which is being lit, one of these powerful lights has to be employed, whereas with acetylene we have a range of burners from 3-candle-power upwards, each burning an exact proportion of gas to the candle-power given. Consequently we can make the definite statement that, apart from comparing high candle-powers, which is entirely misleading (but in which we do not, after all, show very badly), when house lighting is being considered, we can guarantee all comers, and we do guarantee all comers, that:—

1. Acetylene costs less to instal than air-gas.
2. Acetylene for lighting any given house properly costs no more than air-gas, and in many cases less.

If any of your readers are in doubt as to comparative costs, let them get an estimate from one of the firms who advertises that air-gas costs one-third the amount to instal which acetylene does, and we will undertake that we will supply a first-class acetylene installation at something less than the air-gas installation, and so prove that acetylene does not cost three times as much as air-gas to instal. The same firms will doubtless tell your readers that acetylene costs six times as much as air-gas to maintain. Therefore, with the estimate for the installation your readers should insist upon getting a price to maintain the lighting and the plant for one or more years. We will undertake to maintain the acetylene lighting at the same price, and thus prove that acetylene does not cost six times as much as air-gas. We have done this in many cases, and this, indeed, is the only method now left open to us to refute the extravagant statements which are being made by some of the air-gas companies.

Where an actual owner of an air-gas plant has given figures which would substantiate air-gas firms' claims that air-gas costs practically nothing to maintain, and we have had an opportunity of investigating the case, we have usually found that the petrol has been purchased and booked down to the motor-cars, nothing being charged against the air-gas plant, and where an owner of an acetylene installation has had any real grievance about cost it has usually turned out that the carbide, having naturally been bought for lighting the house, has been regarded as used entirely for that purpose, whereas it has been used by the chauffeur in motor-car lamps and by the gardener for various purposes.

In conclusion, I venture to point out to you that I have been engaged in the acetylene lighting business for sixteen years and in the air-gas lighting business for seven years. Consequently I may, perhaps, be given credit for speaking fairly.

There is an enormous field for both acetylene and air-gas, and in a way they do not even compete with each other, their fields lying in different directions; but neither the one nor the other can expect any permanent success based on original misstatements in obtaining business.

H. E. BAKER, Managing Director of THE ACETYLENE CORPORATION OF GREAT BRITAIN, LTD.,

SIR,—In your issue of May 10 you very kindly published a letter from me drawing attention to inaccurate statements in your journal as to the relative cost of lighting by acetylene and petrol air-gas.

In a footnote to my letter you say:—"The discrepancy complained of seems to be based on the price quoted for carbide, which is given by our correspondent at half that at which it is offered to the ordinary purchaser." In reply to this assertion I can only repeat that the market price of carbide to the consumer is not 28s. per hundredweight, but 14s., and for quantities exceeding 4 cwt. the price is 13s. 6d. per hundredweight.

ACETYLENE PUBLICITY, LTD.
VICTOR D. DUVAL (Manager).

FIFTY YEARS AGO.

From the *Builder* of May 24, 1862.

The Monument of the Emperor Nicholas I., St. Petersburg.

THE question of right principles of design for memorials of individuals the most eminent—the several questions rather of nature of the testimonial and realisation of the idea of the *monument*, and all those which relate to the art-treatment of "public statues"—must shortly claim elucidation at our hands, or a restatement of views that long since we put forth. Pending the interval of the accomplishment of our duty, progress in the division last referred to, of the subject, will be induced by the publication that we make this week, of one of the most recently-achieved examples of the form of memorial on the Continent, which is commonly, and with a sort of logic which is productive of bad result, with us called *statue*. Seldom, indeed, do we find the intention which is that expressed by the term *monument*, along with the perception of the principles of collective art, which we have claimed as common with perception of what is architecture, and as perhaps best to be acquired through medium of an architect's education properly conducted—pursued and made apparent with the success that characterises the work which is now, probably for the first time, brought to the notice of British artists. The monument is that at St. Petersburg, just completed, of the Emperor Nicholas, which is due, so far as the main design, to an architect, and as regards the general execution and details to sculptors, individuals of different professions nominally, but who appear in this instance to have co-operated to produce the work which might appear that of one artist—architect capable of moulding the figure and feeling that *sculpture* should be predominant in such a monument, and a representation of the deceased be the end and keynote, or sculptor practised in the details of architectural mouldings and ornaments, and conversant with the æsthetics of our art and the principles of grouping and composition.

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MEETINGS.

FRIDAY, MAY 24.

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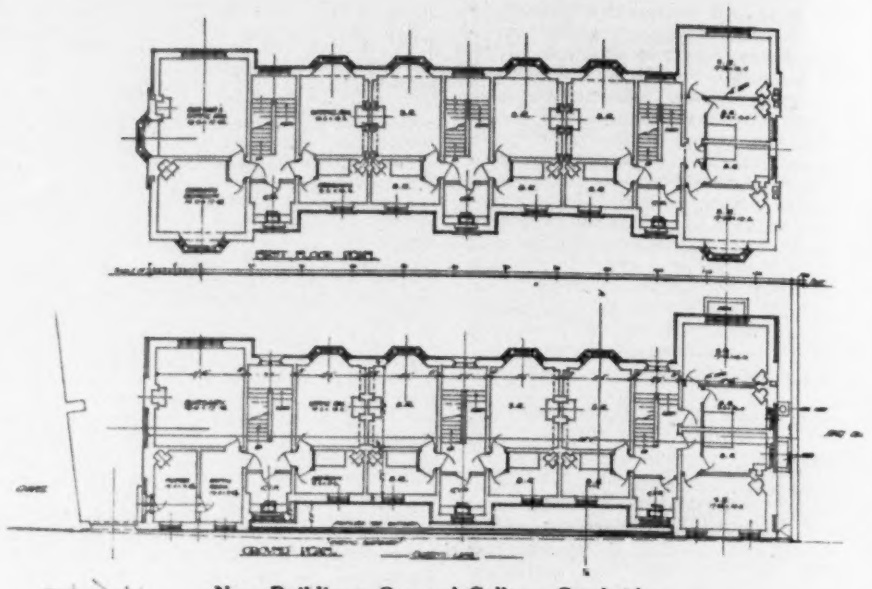
FRIDAY, MAY 31.

Junior Institution of Engineers.—Mr. Arthur Bourne on "Standardisation of Engineering Catalogues."

ILLUSTRATIONS.

Worksop College Chapel.

THIS College of St. Cuthbert's, Worksop, is one of the group of Woodard Schools scattered over the country and founded by Canon Woodard, the chapel forming the principal feature in each block of schools, that of Lancing being the best known. Messrs. Carpenter & Ingelow were the architects employed for the foundation of the schools



New Buildings, Queens' College, Cambridge.
Mr. Cecil G. Hare, Architect.

The Worksop School has for long used a temporary chapel until Lord Mountgarret came forward and offered to erect a permanent chapel at his own cost. This has now been done, and the chapel, an interior view of which we publish to-day, was opened on October 31 last.

The chapel is connected to the school buildings by an ante-chapel, and is 120 ft. long, 36 ft. wide, and 56 ft. to the centre of the ceiling, and seats 450 persons.

The builders were Messrs. Lowe & Sons, of Burton-on-Trent; the decoration of the ceiling was executed by Mr. F. A. Jackson; the sculpture and carving was executed by Mr. Paul Montford, R.B.A.; the clerk of works was Mr. F. Walker; and, since the retirement of Mr. Ingelow, the architect to the School has been Sir Aston Webb, R.A.

North-Western Polytechnic.

A LIMITED competition was held early in the present year for the North-Western Polytechnic, and the assessor, Mr. W. Flockhart, F.R.I.B.A., awarded the first place to Mr. Arnold Mitchell.

GROUND FLOOR PLAN

Business Premises, Doncaster.
Mr. Sydney D. Kitson, F.R.I.B.A., Architect.

F.R.I.B.A. The drawing now reproduced is exhibited at the Royal Academy.

The site of the building is at the corner of Prince of Wales-road and Kentish Town-road, N.W. The main entrance is from Prince of Wales-road, and leads directly to the entrance hall, with main staircase opposite. The rooms are conveniently arranged as classrooms, laboratories, and workshops, and are designed for instruction of a nature to meet the growing requirements of the district. The exterior is of brick and stone, simple in treatment, consistent with a rigid limit of cost.

Business Premises, Doncaster.

THIS building, situated in the centre of Doncaster, is now in course of erection for Colonel Somerville, to take the place of an old house and garden.

The front of the ground floor will be occupied by a bank, while the rear portion of the ground floor and the whole of the upper stories are intended for offices.

The front is being built of Portland stone with steel window frames. The whole of the floors are of concrete construction reinforced with steel joists and expanded metal.

Mr. Sydney D. Kitson, F.R.I.B.A., is the architect, and Messrs. Harold Arnold & Sons, of Doncaster, are the contractors.

Queens' College, Cambridge.

THESE new buildings are to be erected on the site of some old almshouses, and will form the third side of an incomplete quadrangle. The chapel is to the north, and Fawcetts Buildings to the south.

The east side of the new block abuts directly on to Queens'-lane, and this elevation forms the subject of the illustration, the original of which was shown in the Royal Academy Exhibition last year.

The buildings provide accommodation for twenty-six undergraduates, with rooms also for the bursar and occasional guests, and have been planned in the traditional manner.

The materials proposed are small red brick with Clipsham stone dressings and red-tiled roof, in harmony with existing buildings, and the buildings are arranged with fireproof floors and staircases throughout. Bathrooms and lavatories have been arranged in the basement.

The late Mr. G. F. Bodley was responsible for the chapel, while the new buildings which adjoin it have been designed by Mr. Cecil G. Hare.

INTERNATIONAL FIRE SERVICE COUNCIL.

This year's general meeting of the International Fire Service Council has been postponed to Wednesday, June 5, which is the last day of the International Conference on Fire Prevention, Fire Service, and Fire Insurance Questions, to be held under the auspices of the Council on June 2 and subsequent days, instead of the previously announced May 25. The Council's temporary headquarters are at the Hôtel de l'Europe, St. Petersburg.

INK-PHOTO" SPRAGUE & CO. LTD 69 & 70, DEAN STREET, SOHO, W

WORKSOP COLLEGE, NOTTS.: INTERIOR OF NEW CHAPEL.—Sir Aston Webb, R.A., Architect

(Royal Academy Exhibition, 1912.)

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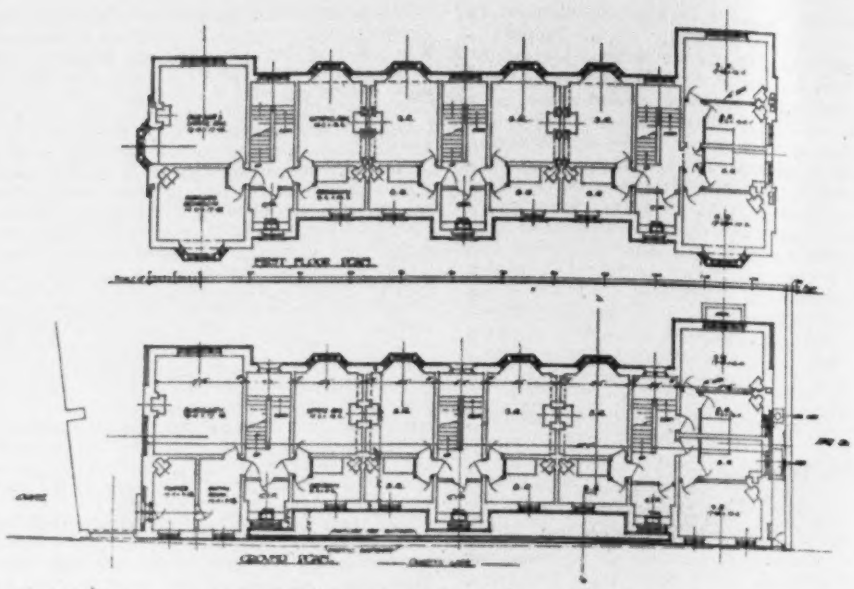
FRIDAY, MAY 31.

Junior Institution of Engineers.—Mr. Arthur Bourne on "Standardisation of Engineering Catalogues."

ILLUSTRATIONS.

Worksop College Chapel.

THIS College of St. Cuthbert's, Worksop, is one of the group of Woodard Schools scattered over the country and founded by Canon Woodard, the chapel forming the principal feature in each block of schools, that of Lancing being the best known. Messrs. Carpenter & Ingelow were the architects employed for the foundation of the schools.



New Buildings, Queens' College, Cambridge.
Mr. Cecil G. Hare, Architect.

The Worksop School has for long used a temporary chapel until Lord Mountgarret came forward and offered to erect a permanent chapel at his own cost. This has now been done, and the chapel, an interior view of which we publish to-day, was opened on October 31 last.

The chapel is connected to the school buildings by an ante-chapel, and is 120 ft. long, 36 ft. wide, and 56 ft. to the centre of the ceiling, and seats 450 persons.

The builders were Messrs. Lowe & Sons, of Burton-on-Trent; the decoration of the ceiling was executed by Mr. F. A. Jackson; the sculpture and carving was executed by Mr. Paul Montford, R.B.A.; the clerk of works was Mr. F. Walker; and, since the retirement of Mr. Ingelow, the architect to the School has been Sir Aston Webb, R.A.

North-Western Polytechnic.

A LIMITED competition was held early in the present year for the North-Western Polytechnic, and the assessor, Mr. W. Flockhart, F.R.I.B.A., awarded the first place to Mr. Arnold Mitchell, F.R.I.B.A. The drawing now reproduced is exhibited at the Royal Academy.

GROUND FLOOR PLAN

Business Premises, Doncaster.
Mr. Sydney D. Kitson, F.R.I.B.A., Architect.

The site of the building is at the corner of Prince of Wales-road and Kentish Town-road, N.W. The main entrance is from Prince of Wales-road, and leads directly to the entrance hall, with main staircase opposite. The rooms are conveniently arranged as classrooms, laboratories, and workshops, and are designed for instruction of a nature to meet the growing requirements of the district. The exterior is of brick and stone, simple in treatment, consistent with a rigid limit of cost.

Business Premises, Doncaster.

THIS building, situated in the centre of Doncaster, is now in course of erection for Colonel Somerville, to take the place of an old house and garden.

The front of the ground floor will be occupied by a bank, while the rear portion of the ground floor and the whole of the upper stories are intended for offices.

The front is being built of Portland stone with steel window frames. The whole of the floors are of concrete construction reinforced with steel joists and expanded metal.

Mr. Sydney D. Kitson, F.R.I.B.A., is the architect, and Messrs. Harold Arnold & Sons, of Doncaster, are the contractors.

Queens' College, Cambridge.

THESE new buildings are to be erected on the site of some old almshouses, and will form the third side of an incomplete quadrangle. The chapel is to the north and Fawcetts Buildings to the south.

The east side of the new block abuts directly on to Queens'-lane, and this elevation forms the subject of the illustration, the original of which was shown in the Royal Academy Exhibition last year.

The buildings provide accommodation for twenty-six undergraduates, with rooms also for the bursar and occasional guests, and have been planned in the traditional manner.

The materials proposed are small red brick with Clipsham stone dressings and red-tiled roof, in harmony with existing buildings, and the buildings are arranged with fireproof floors and staircases throughout. Bathrooms and lavatories have been arranged in the basement.

The late Mr. G. F. Bodley was responsible for the chapel, while the new buildings which adjoin it have been designed by Mr. Cecil G. Hare.

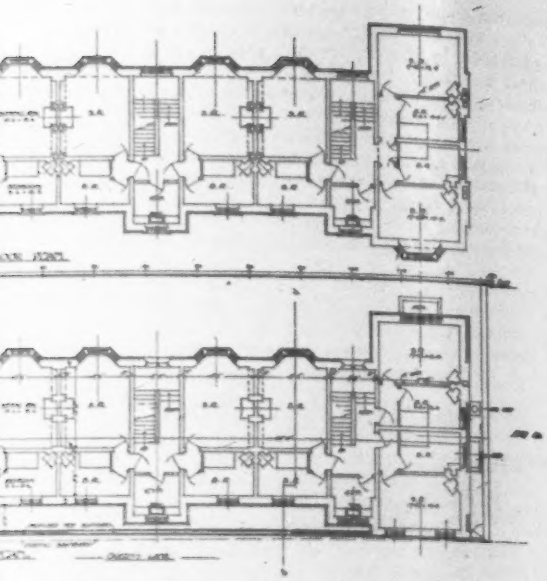
INTERNATIONAL FIRE SERVICE COUNCIL.

This year's general meeting of the International Fire Service Council has been postponed to Wednesday, June 5, which is the last day of the International Conference on Fire Prevention, Fire Service, and Fire Insurance Questions, to be held under the auspices of the Council on June 2 and subsequent days, instead of the previously announced May 25. The Council's temporary headquarters are at the Hôtel de l'Europe, St. Petersburg.

INK-PHOTO" SPRAGUE & CO LTD 69 & 70, DEAN STREET, SOHO, W

WORKSOP COLLEGE, NOTTS.: INTERIOR OF NEW CHAPEL.—Sir Aston Webb, R.A., Architect

(Royal Academy Exhibition, 1912.)



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PLAN

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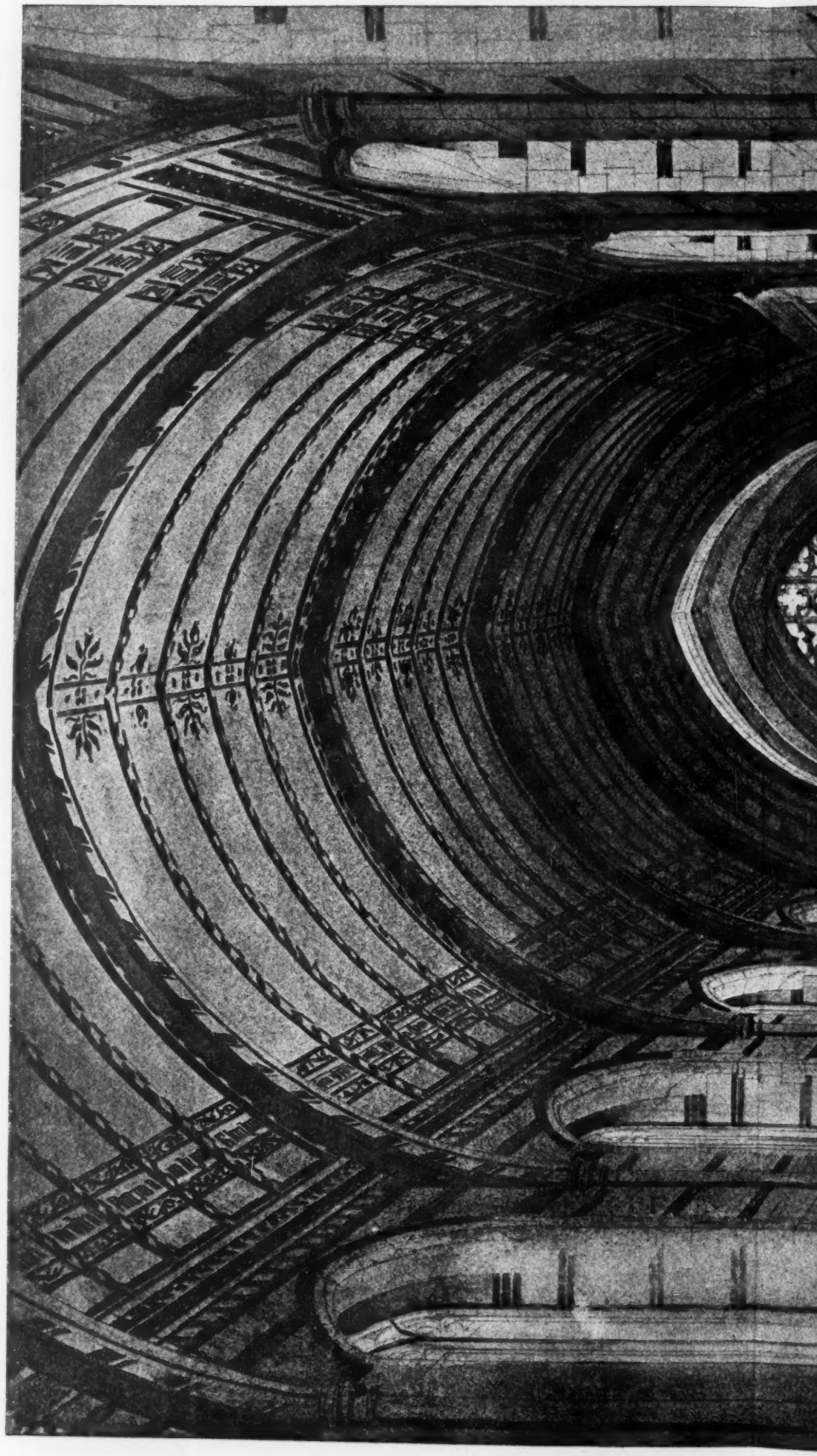
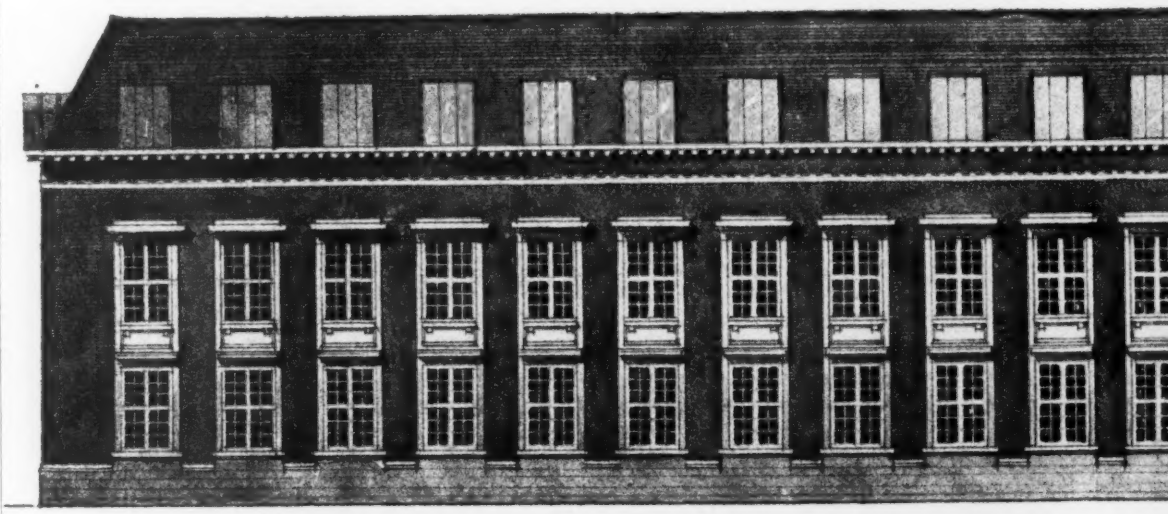


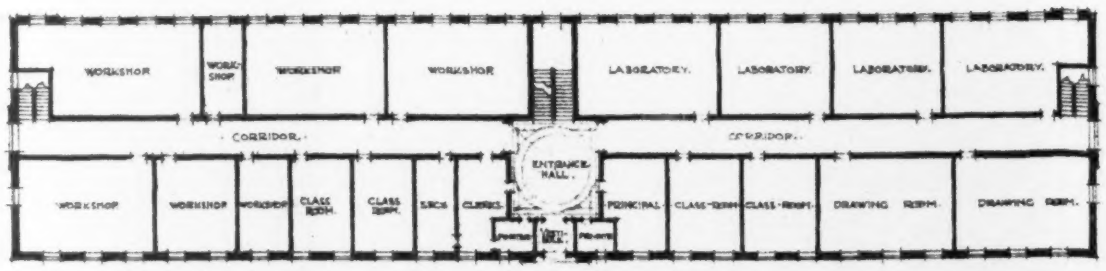
INK-PHOTO" SPRAGUE & CO. LTD. 69 & 70, DEAN STREET, SOHO, W.

WORKSOP COLLEGE, NOTTS.: INTERIOR OF NEW CHAPEL.—Sir Aston Webb, R.A., Architect

(Royal Academy Exhibition, 1912.)

THE NORTH-WESTERN POLYTECHNIC.
KENTISH TOWN. N.W.





PLAN OF GROUND FLOOR.

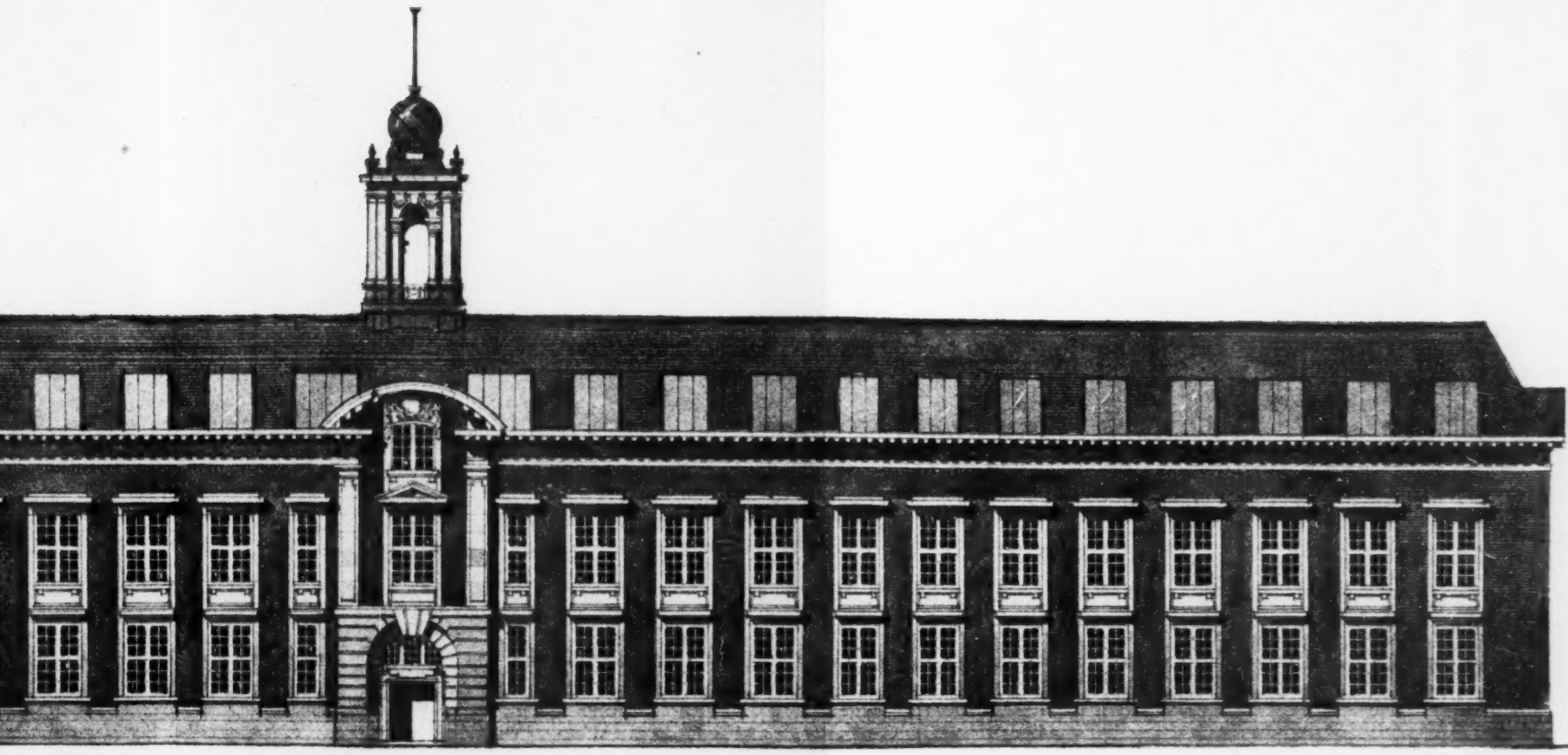
Scale of

Scale of

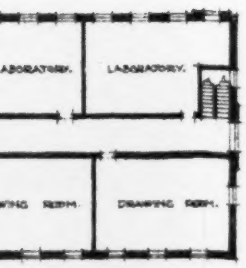
THE NORTH-WESTERN POLYTECH

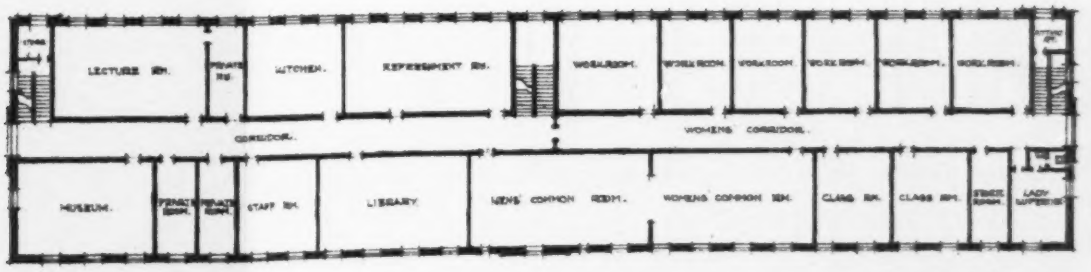
(Royal Academy Exhibition, 1912.)

LYTECHNIC.



FRONT TO PRINCE OF WALES' ROAD.





PLAN OF FIRST FLOOR.

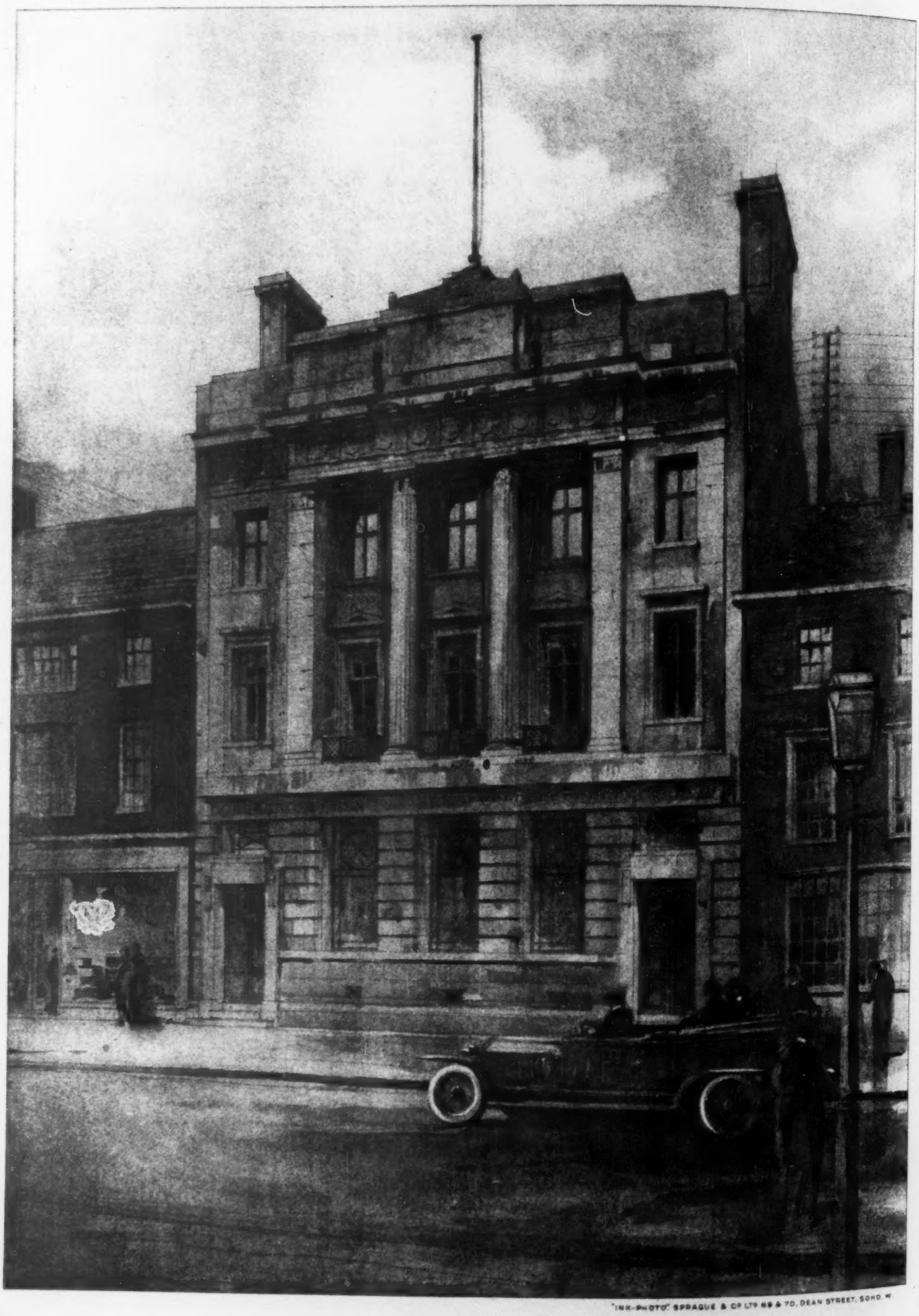
SCALE OF FEET (FOR ELEVATION)

SCALE OF FEET (FOR PLANS)

ARNOLD MITCHELL F.R.I.B.A. ARCHT. 17 HANOVER SQUARE LONDON W.

"INK-PHOTO" SPRAGUE & Co LTD 39 & 70, DEAN STREET, SOHO, W.

-WESTERN POLYTECHNIC, KENTISH TOWN ROAD.—Mr. Arnold Mitchell, F.R.I.B.A., Architect.



"INK-PHOTO" SPRAGUE & Co LTD 69 & 70, DEAN STREET, SOHO, W.

BUSINESS PREMISES, HIGH STREET, DONCASTER.—Mr. Sydney D. Kitson, F.R.I.B.A., Architect

(Royal Academy Exhibition, 1912.)

"INK-PHOTO" SPRAGUE & Co LTD 69 & 70, DEAN STREET, SOHO, W.

NEW BUILDINGS, QUEEN'S COLLEGE, CAMBRIDGE.—Mr. Cecil G. Hare, Architect.

(Royal Academy Exhibition, 1911.)

MONTHLY REVIEW · *of* · ENGINEERING.

LIGHTING BY ACETYLENE GAS.

LAST century might be said to have commenced a new era so far as lighting is concerned. In 1836 the great chemist Davy found that the residue obtained in the extraction of potassium evolved an evil-smelling combustible gas when brought into contact with water, and in 1862 Wöhler actually produced calcium carbide and from it acetylene, which compound (calcium carbide) was decomposed by water and formed lime, giving off at the same time acetylene. Thus the first steps were taken which of late years have led to the useful manufacture of a product and gas which have become of great use to the public in general. Other gases were closely investigated, with the result that we now have a choice of several effective means of lighting for various purposes.

The material from which the gas is primarily made must be one that can be readily obtained commercially at a low rate. Calcium carbide, from which acetylene gas is produced, is now a well-known commodity, and its adaptability has been effectively demonstrated by cyclists and motorists.

The manufacture of the gas must be done in as simple a way as possible; the plant must not be complicated, but should be of such simple design that a stable-boy can attend to it. Acetylene is made in the plant by bringing water and calcium carbide into contact, their chemical combination producing the gas. The chemical action is shown by the following equation, $CaC_2 + H_2O = C_2H_2 + CaO$. That is to say, the carbon of the calcium carbide and the hydrogen of the water unite, forming acetylene (C_2H_2) and lime.

Calcium carbide is a hard greyish crystalline solid, staple in dry air, but decomposed by the smallest quantity of water. It must therefore be stored in air-tight bins. It is manufactured by fusing a pure form of coke or powdered carbon and well-burnt lime in an electric furnace. Thus can be briefly described the manufacture of acetylene gas. Regarding its properties, acetylene is a colourless gas with a most penetrating smell—by which means a leakage is readily detected—but giving no smell during combustion, and taking but little oxygen from the air in this process. It has poisonous properties, as also have other gases which sometimes occur in it, but these are removed in the various gas plants by washing the gas and making it pass through a purifier containing a chemical substance. The light is a pure white light, a very near approach to sunlight.

The following particulars are taken from Kemp's "Year-Book," and show the various properties of acetylene or C_2H_2.

Density = 13 (hydrogen = 1). Molecular weight, 26.
Pounds per foot cube = ·07267. Cubic feet per pound = 13·456.
Grammes per litre = 1·190. Litres per gramme, ·840

REQUIRED TO BURN ONE UNIT.

Weight.		Volume.	
Air.	Oxygen.	Air.	Oxygen.
13·578	3·077	11·93	2·500

NOMINAL TEMPERATURE OF COMBUSTION.

Air.		Oxygen.	
F°.	C°.	F°.	C°.
6120	3400	20340	11300

HEAT GENERATED BY COMBUSTION OF ONE POUND.

Pound.	Cube feet.	Gramme.	Litre.	Molecule.
B.T.U.	B.T.U.	Cal.	Cal.	Cal.
2·856	1624	12·142	14·46	315·7

Heat of formation at 15° C. per molecule – 58·1.

SPECIFIC HEAT.
(Water = 1.)

Liquid.	Constant	
	Pressure.	Volume.
—	·373	—

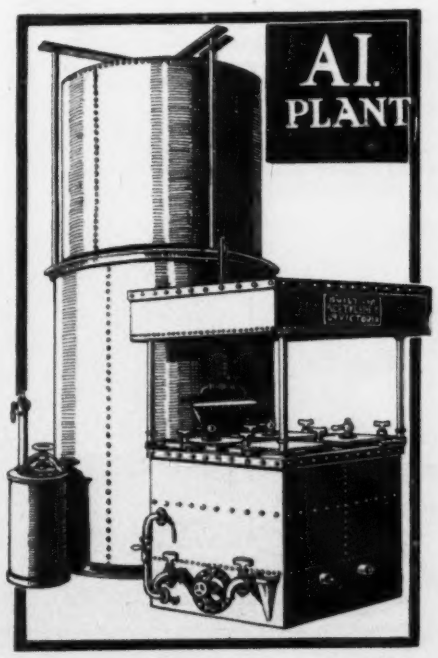
Generating Plants.

The plants employed may be classed generally under two heads, viz., water to carbide or water-fed and (2) carbide to water or carbide-fed.

In the first the water is added generally in small quantities to the carbide, which is placed in suitable trays, etc., whilst in the second the carbide is placed directly into a receptacle containing water. Two general types of both these classes are employed, viz., the automatic and non-automatic plants. The automatic plant is one in which the acetylene is produced as required, the machine working according to the demand; the non-automatic is one in which the supply is stored in a gas-holder and generally made some time before it is actually required. It must be clearly understood that these notes but briefly describe various makes of machines, and are simply to illustrate some of the types. As improvements are from time to time being made by each manufacturer in the matter of detail as a result of experiment and experience, the construction and arrangements vary accordingly.

As examples of the water-fed automatic plant and the carbide-fed non-automatic plant, the machines manufactured by the Imperial Light, Ltd., may be described.

In the water-fed machine the trays in the generators (there may be two or more generators) are filled with carbide. The washer, the holder, and the water-tank are filled with water to a certain level and the purifier is charged with purifying material. To make acetylene, turn on one of the taps, and water will flow from the tank into the generator. Acetylene will then be given off by the carbide and, passing through the holder, will cause the bell to rise until the water control tap is automatically shut off. No more acetylene will be made until the gas in the bell is drawn off through the purifier, when on the fall of the bell more water is admitted. This automatic action continues until the first generator is exhausted, upon which the water automatically flows to the second generator. This continues until all the generators have become exhausted. The generators which have become exhausted can be recharged whilst the plant is working.



A1 Plant by the Acetylene Corporation, Ltd.

The carbide-fed non-automatic plant works as follows:—Water is admitted to the generator, washer, and holder, and the purifier is charged with purifying material. Lumps of carbide are thrown into the generator through the valve, which, on coming into contact with the water, immediately begin to give off acetylene gas. The gas passes down through the washer, into the holder, where it is stored until required. The lime sludge which is formed in the generator is emptied by opening the sludge tap, and can be used for the garden, etc. Such is the general line upon which these plants work, but, of course, each make has slight differences of detail.

In the "Luby" Improved Generator, five to 1,000 lights, manufactured by Messrs. George Adlam & Sons, Ltd., the carbide to water principle is employed. The carbide is placed in a series of buckets, each holding about 1 lb. of carbide, and each bucket automatically discharges in turn into the shute communicating with the water in the bottom of the generator. The generation of gas causes the gasometer to rise, and as gas is taken from the gasometer for lighting this vessel falls and another bucketful of carbide is discharged into the shute. When the lights are not in use the "Automatic Generator" (another machine made by the same firm) which works on the water to carbide principle, ceases operation. This machine is suitable for small installations of five to twenty lights.

The A1 plant of the Acetylene Corporation, Ltd., is illustrated herewith. It consists of one or more generators, gas-holder, water-supply tank, washer, purifier, and water-trough. In the rectangular generators circular pans containing carbide are placed. In this plant the washer is a warm washer. A separate water-tank supplies the water for generation, just sufficient water for one charge being supplied at one time. The gas, having been washed in the warm washer, and dust and ammonia removed, it is conveyed through a cold-water jacketed pipe into the gas-holder, any condensation falling back into the washer. On leaving the gas-holder and before entering the service pipe, the gas is passed through the purifier, where any traces of phosphorus and sulphur remaining in the gas are removed.

The Dargue patent generator, manufactured by the Dargue Acetylene Gas Company, Ltd., may be described briefly as follows:—There is a water-tank and a gas-holder, while two cylinders pass through the water-tank and contain the carbide, etc. The water supply to the carbide is obtained from the water-tank and the quantity regulated by means of automatic valves operated by the rising and falling of the gas-holder. The continuity of the gas supply is maintained by having two or more carbide containers, which, coming automatically in action in turn, accomplish this. The carbide containers are surrounded by water to ensure a low temperature of generation. Before the gas flows into the gas-holder it is passed in a fine spray through part of the water in the gas-holder tank. A chemical purifier is made to suit the various sizes of the machines for the final cleansing of the gas.

Messrs. F. Braby & Co., Ltd., also manufacture various types of machine the working of which can be gathered by the remarks relating to other machines.

In the machine made by the Thorn & Hoddle Acetylene Company, Ltd., instead of the water falling in drops on to the carbide, the mechanical arrangements are such that the water gradually rises to surround the carbide. The gas after passing into the bell flows through the chemical purifier before it reaches the gas main, the whole contrivance being so arranged that the gas finally issues at the gas jets free from all impurities and in a cool, dry state.

The price of the chemical "curaze," sold by them for use in the purifier, is 6d. per pound, and chemically pure cotton wool is also supplied at 2s. a pound. The amount of chemical required varies with the number of lights. For four 20-candle-power lights 1¼ lb. are required, whilst for 200 lights 30 lb. are necessary. One charge of chemical purifier lasts

from two to four months according to season. Suitable dimensions of the gas-house are given as 5 ft. × 6 ft. × 7 ft. 6 in. high for a small machine, and 7 ft. 6 in. × 9 ft. × 11 ft. high for a large plant.

Professor Vivian B. Lewis tested one of the machines mentioned, and found that the yield of gas was from 95 to 99 per cent. of that possible to be obtained from the carbide tested. There was a constant 3-in. pressure of gas at the burners, whilst in the generator the pressure did not exceed 11 in.

The general desirable points to be gained in gas production and supply might be tabulated as follows:—(1) A pure gas; (2) regular pressure at the burners; (3) no waste of carbide; (4) ample supply to suit the demand; (5) recharging of plant without disturbance of lights; (6) gas-holder large enough to take any aftermath of acetylene; (7) machine to be strong, of material unaffected by the gas, well constructed to prevent leakage, and as little complicated as possible; (8) small cost of upkeep.

There are other points, but perhaps these may be considered the most important. For instance, local considerations might limit the type of machine, such as scarcity of water.

Cost of Gas.

The cost of gas depends upon the market price of calcium carbide and upon the quantity purchased at one time. Assuming, for the sake of calculation, the price of 1½d. per pound, the next factor is the amount of gas that 1 lb. will produce. Professor Gatehouse tested one brand last year and found it capable of giving 5·38 cubic ft. of gas per pound. Of course, this amount depends upon the quality, and in any machine the thoroughness of the chemical action. Taking 5 cubic ft. as round figures, the next point is the consumption per burner and its candle-power. If a 25-candle-power burner consumes ½ cubic ft. of gas per hour, in ten hours 5 cubic ft. would be burnt. A 100-candle-power burner would consume four times this amount, or 4 lb. of carbide would be used. These assumptions, of course, must be altered to suit any particular case. Taking the cost of carbide at 1½d. per pound then, as 5 cubic ft. are produced from this and 20 cubic ft. are required for 100-candle-power light burning ten hours (at ½ cubic ft. of gas per hour for a 25-candle-power light), the total amount of carbide used is 4 lb. The cost of the above on this basis is therefore 4 lb. × 1½d. = 6d.

There is also the question of the renewal of the chemical purifier, cost of water, any repairs and attention necessary, etc., the last of which are very little. The expense of running a 250-light machine has in one case averaged about 2*l.* a year, excluding carbide.

With regard to the pipes and fittings. Acetylene has greater penetrative powers than gas, so special attention should be given to these. A much smaller bore pipe than is necessary for gas can be used, but it should be of the best material. The joints should be accurately fitting, necessitating a minimum amount of white-lead used. The fittings should also be of the best quality or else trouble is likely to ensue in leakages through cocks, etc.

Burners.

With regard to burners, Messrs. Bray's have patented several, of which some are on the union jet principle and some on the Bunsen principle. The holes for the delivery of the gas are very small, and arranged so that the gas jets impinge on one another and form a flat flame. The burners on the Bunsen principle can be turned down like ordinary gas jets without any fear of carbonisation, a risk always run by the other types. The burners on the Bunsen principle are the most expensive, some costing about 8s. 6d. a dozen. As the burners are made in various sizes, the following particulars, given by Professor Elsey Smith, might be useful:—Burners consuming ½ cubic ft. per hour give a light of 6·2 candles; burners consuming ¼ cubic ft. per hour, 17·5 candles; burners consuming ⅛ cubic ft. per hour, 35 candles.

As with plant so with burners; therefore these figures are given simply as a means of illustration, for it must be remembered that engineering moves rapidly to-day, and what was considered good practice a few years ago has now become out of date.

For example, Messrs. Thorn & Hoddle, Ltd., give the consumption of the "Incanto" burners and corresponding candle-power as follows:—

⅛	ft.	per	hour,	approximate	candle-power		20
¼	,,	,,	,,	,,	,,	,,	30
⅜	,,	,,	,,	,,	,,	,,	40
½	,,	,,	,,	,,	,,	,,	40
1	,,	,,	,,	,,	,,	,,	60

These are on the Bunsen principle and will not carbonise when the burners are turned low.

Speaking generally, the common coal-gas burners are the simplest in construction and action, although they are not economical now that incandescent mantles have been introduced. The fact is, however, that incandescent mantles do not remain clean and give their full lighting value, but soon begin to give a poorer light. Acetylene can be burnt either with the simple burners already mentioned or with the aid of incandescent mantles; with the latter a very great increase in brilliancy is obtained. As rapid developments are being made with incandescent mantles, and the fragile structure of those first introduced is being replaced by a less fragile material, there is every reason to suppose that the above objections will be greatly modified.

Bye-pass Switches.

To enable the light to be turned fully up when entering the room, bye-pass switches can be fixed at suitable positions near doors, etc. The pilot light, of course, must be first ignited, after which the switch can be used at any time.

Plant Buildings.

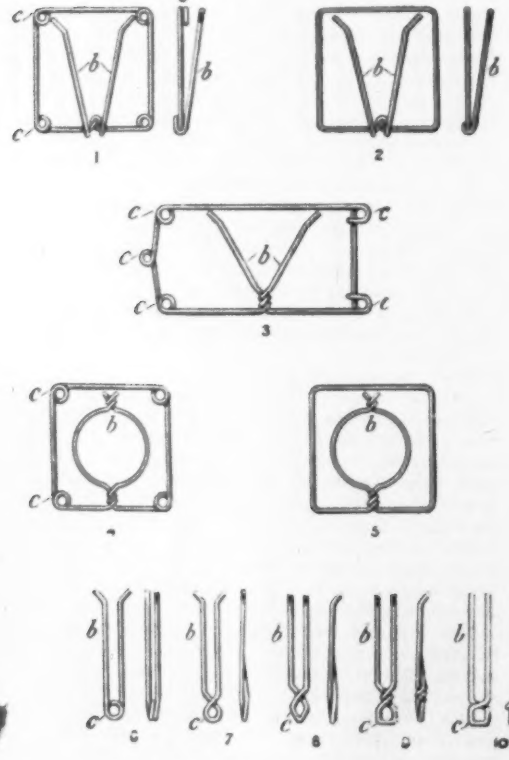
The plant should be placed in an external building, and smoking, etc., should be strictly forbidden in the room in which the plant is situated. To store calcium carbide it is necessary to obtain a licence from the local authority if the user desires to store any quantity of it. The insurance companies, however, make no extra charge for insurance.

As carbide, as has been previously stated, has a great affinity for water, for instance, in the form of moisture in the air, etc., it must be kept in an air-tight bin. These are specially made and are supplied by the various makers of acetylene plant.

Besides the general plant for the production of acetylene throughout the house, lamps of the "table-lamp" type can be had which employ acetylene. Similarly it has been applied to a variety of lamps, hand and otherwise, and is especially useful as a "flare lamp" for night work as commonly employed by contractors. Welding can be done by means of an oxy-acetylene flame as well as the cutting of metal, and in this way is of great use to structural engineers.

Extent of Adoption.

During the last decade the acetylene industry has developed considerably, and the illuminant has become well known and appreciated. Many thousands of plants of all capacities have been installed throughout the kingdom. It may be mentioned that, in order to reduce the cost of carriage of carbide, depôts for supplies have been established in London, Rochester, Ipswich, Hull, Newcastle-on-Tyne, Manchester, Cardiff, Glasgow, Aberdeen, Dublin, and elsewhere.



Figs. 1 to 10.

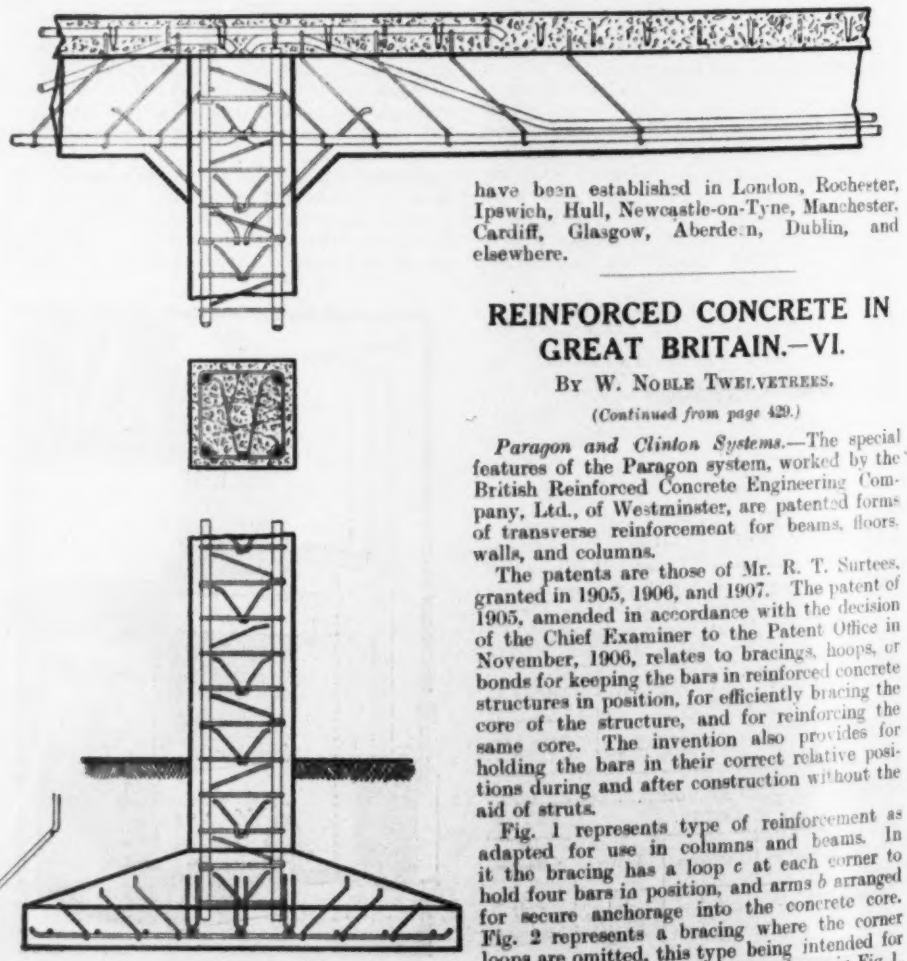


Fig. 11. Beam and Column Construction.

REINFORCED CONCRETE IN GREAT BRITAIN.—VI.

By W. Noble Twelvetrees.

(*Continued from page 429.*)

Paragon and Clinton Systems.—The special features of the Paragon system, worked by the British Reinforced Concrete Engineering Company, Ltd., of Westminster, are patented forms of transverse reinforcement for beams, floors, walls, and columns.

The patents are those of Mr. R. T. Surtees, granted in 1905, 1906, and 1907. The patent of 1905, amended in accordance with the decision of the Chief Examiner to the Patent Office in November, 1906, relates to bracings, hoops, or bonds for keeping the bars in reinforced concrete structures in position, for efficiently bracing the core of the structure, and for reinforcing the same core. The invention also provides for holding the bars in their correct relative positions during and after construction without the aid of struts.

Fig. 1 represents type of reinforcement as adapted for use in columns and beams. In it the bracing has a loop *c* at each corner to hold four bars in position, and arms *b* arranged for secure anchorage into the concrete core. Fig. 2 represents a bracing where the corner loops are omitted, this type being intended for use in conjunction with the type shown in Fig. 1.

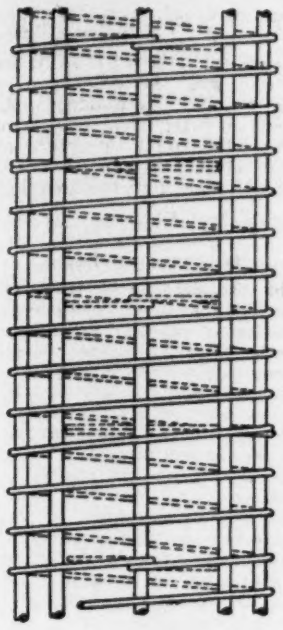


Fig. 12. Spiral Reinforcement for Columns.

In constructing a column about every fifth bracing is similar to Fig. 1, and the intervening bracings are similar to Fig. 2.

Fig. 3 illustrates a bracing for use in structures with a tongue on one side and a groove on the other. It has five loops for holding in place the reinforcing bars.

Figs. 4 and 5 are similar to Figs. 1 and 2, except that the arms *b* are curved and their ends twisted to form a central ring to enable the bracings to be used in the construction of columns or struts with a pipe or hollow around the central axis.

Figs. 6 to 10 illustrate four varieties of the bracings in the form of stirrups for beams, floor slabs, and walls. In each case a loop *c* is formed so as to grip the bars forming the longitudinal reinforcement, and the arms *b* may be placed vertically or bent so as to lie at any desired angle.

Fig. 11 shows the application of the bracing and stirrups to beam and column construction.

The patent of 1906 relates to transverse reinforcement for columns and similar members, and consisting of a length of spirally-wound metal with or without one or more loops in its length, and its ends extending across the area enclosed by the wrapping, as illustrated in Fig. 12. The spirals can have any required number of turns in each section. It is claimed that this type of reinforcement possesses all the advantages of spiral coils in continuous lengths, with the additional advantages that the longitudinal bars are held in position, and that the concrete can be added in successive layers and well rammed instead of being poured in from the top of a closed mould.

When the column is complete the sections constitute one long helical wrapping from top to bottom. Helical coils of this description are suitable for columns of round, square, or polygonal cross section, and may be used in conjunction with "Paragon" hooping of the kind illustrated in Fig. 1, if desired.

The patent of 1907 relates to an improved stirrup for beams and similar members, the stirrup consisting of a rod or bar of metal of round, square, or other suitable cross-section, bent so as to form a loop suitable for threading on the main reinforcing bar, the projecting ends of the stirrups being long enough to extend into the opposite side of the beam, and arranged to lie at any required angle. The loop is made so as to grip the main bar with the object of preventing the stirrup from slipping. Fig. 13 represents the application of such stirrups to round and square bars.

For the reinforcement of concrete slabs, the British Reinforced Concrete Company employ a special type of wire mesh which has been largely adopted in the United States, where it is made by the Clinton Wire Cloth Company.

This fabric, which was introduced into Great Britain by the British Reinforced Concrete Company, consists of a wire mesh made up of a series of parallel longitudinal steel wires, spaced at certain distances apart, and held at intervals by means of transverse wires arranged at right angles to the longitudinal wires, being securely welded to them at the points of intersection by a patented electrical process. The appearance of the finished product is illustrated in Fig. 14, and the character of the weld between the longitudinal and transverse wires is shown by Fig. 15.

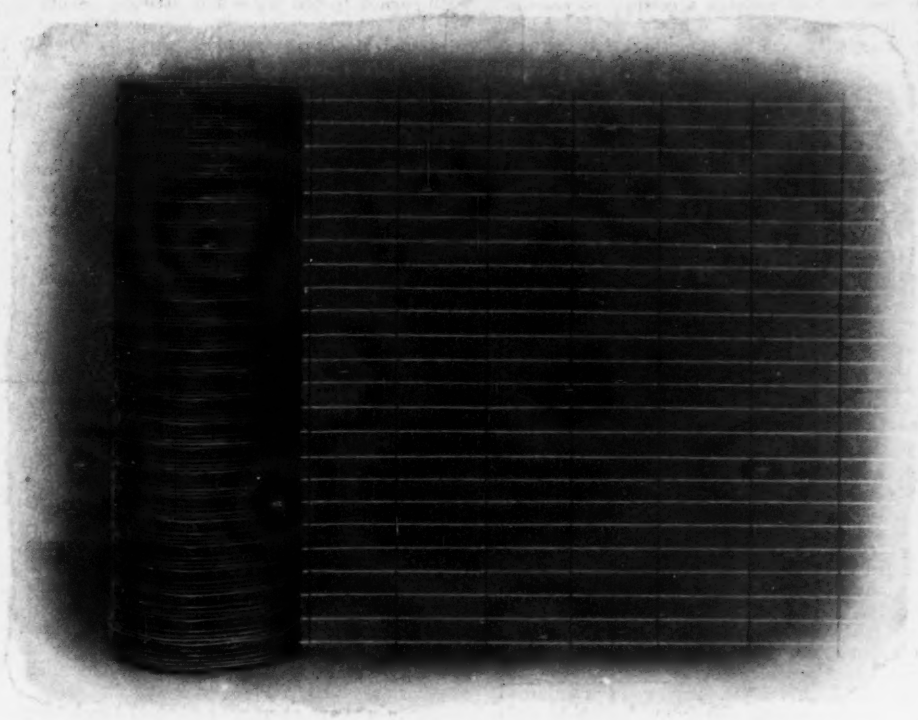


Fig. 14. Clinton Wire Fabric.

The Clinton fabric is suitable for the reinforcement of flat or curved concrete slabs in all kinds of reinforced concrete construction, as well as for the fire protection of steel work in conjunction with cement mortar or fire-resisting plaster.

The business methods of the British Reinforced Concrete Company may be thus briefly stated:—

In cases where they are asked to prepare designs on a professional basis payment is made at a percentage rate of the cost of the work, as in architectural practice.

In other cases the company prepare designs for clients, and obtain competitive estimates from building contractors who are competent to undertake reinforced concrete work. The successful contractor buys reinforcement from the company, whose profit on the sale covers the cost of designs, royalties, and the executive work in connexion with carrying out the contract.

In still other cases the company themselves quote for work, taking contracts direct, and making their own arrangements as regards sub-contracting.

All designs are in accordance with the rules and regulations recommended by the Royal Institute of British Architects Committee on Reinforced Concrete, and the company take full responsibility for reinforcement supplied if they have prepared the design for the work where such reinforcement is used, or if they have approved designs prepared by the architect or engineer responsible for the execution of the work.

Keedon System.—In our issue of November 3 last the essential features of this system, introduced by Messrs. Richard Johnson, Clapham, & Morris, Ltd., of Manchester, were described and illustrated.

Our readers are referred to the article in question for full details, but as a matter of convenience we may here state that the distinctive characteristic of the system is the employment of special web reinforcement in beams and special transverse reinforcement in columns, in conjunction with ordinary round steel bars.

The auxiliary reinforcement in each case is arranged so that it is securely keyed on to the main bars, with the object of preventing accidental displacement of the web or transverse members during the deposition and ramming of the concrete, and also for the purpose of providing an efficient mechanical bond between the concrete and the steel.

The "Keedon" reinforcement can be purchased at fixed charges by any one with or without the main bars. The firm give expert advice, designs, and tenders free of charge,

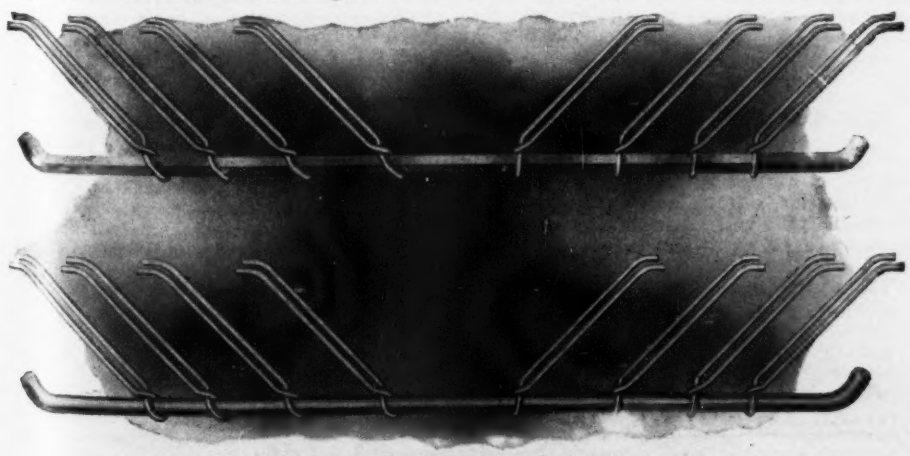


Fig. 13. Stirrups for Square and Round Bars in Beams.

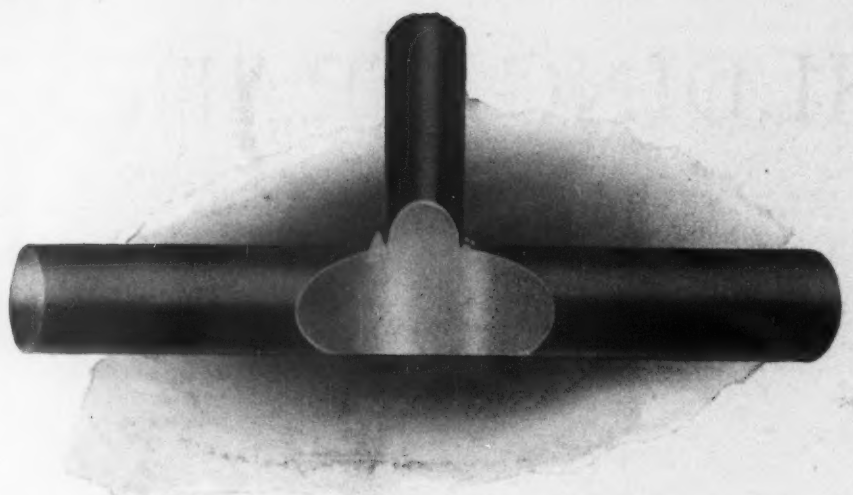


Fig. 15. Weld of Clinton Wire Fabric.

and accept full responsibility for any work designed by them.

As our readers are aware, Messrs. Richard Johnson, Clapham, & Morris have also made a speciality of reinforced brickwork, and are the proprietors of Johnson's Lattice system of reinforced concrete floors.

Expanded Metal.—A review of reinforced construction would obviously be incomplete without mention of the facilities placed at the disposal of architects and engineers by the Expanded Metal Company, Ltd., of York Mansions, Westminster, although the special types of reinforcement made by this firm are not recommended for application in connexion with any particular "system." On the contrary, they are available for general use in accordance with recognised principles of reinforced concrete design as well as for employment in structural and decorative details closely allied or incidental to reinforced concrete work.

Expanded metal sheets and expanded metal bars are supplied at fixed rates to all purchasers without restriction of any kind, and if desired by architects the company will undertake to furnish details showing the most suitable method of employing expanded metal alone or in conjunction with other forms of steel as reinforcement.

In our issues of December 10, 1910, and April 14, 1911, we devoted considerable attention to the uses of expanded metal in reinforced concrete and other types of construction. Nothing need be added at the present time to the particulars given in the above-mentioned numbers of the *Builder*, to which readers are referred for detailed information.

Spiral Bond Bars.—Although, like some other types of patented reinforcement, the bars recently introduced by the Spiral Bond Bar Company, Ltd., of Westminster, do not in themselves constitute a "system," they deserve mention in the present series of articles, being applicable to reinforced concrete construction of any kind designed in accordance with established principles.

These bars are rolled from mild steel of quality equal to that defined by the British Standard Specification for Structural Steel, but in consequence of the mechanical process to which the bars are subjected the elastic and ultimlimit ate strength of the metal are increased by more than 50 per cent. and 40 per cent. respectively, and the resistance to bending is increased by about 70 per cent.

As originally rolled, the bars are of hexagonal cross-section, and they are afterwards gently twisted until the surface presents the helically fluted appearance represented in Fig. 1.

Notwithstanding their high resistance, the bars are as ductile as ordinary mild steel bars, and can be bent cold, as shown in Fig. 2, without fracture.

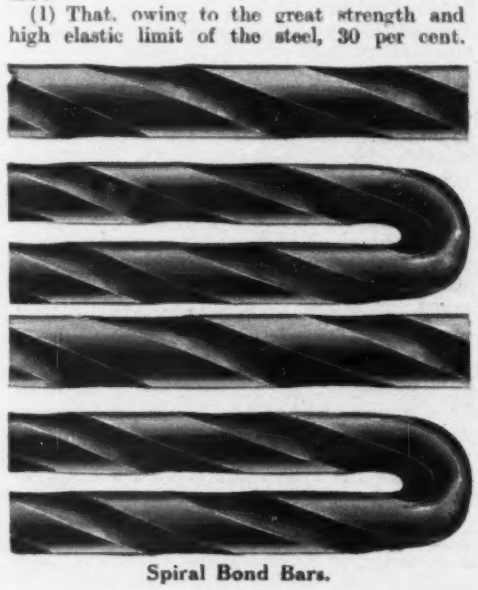
The twisting is continued to a point which numerous trials and tests have proved to conduce to the most beneficial results, and it is interesting to note that it causes no change in the length of the bars, the fibres merely rotating about the centre of the bar.

The helical depressions are sufficient to ensure a good mechanical bond between the steel and the concrete, and thus obviate the need for bending the ends of the bars to J form, or of splitting and fish-tailing the bars in the usual manner.

These bars are at present produced in fifteen sizes, ranging from $\frac{5}{16}$ in. to 1¼ in. diameter, and are supplied by the company or their licensees without restrictions of any kind.

The advantages claimed for Spiral Bond bars are:—

(1) That, owing to the great strength and high elastic limit of the steel, 30 per cent.



Spiral Bond Bars.

less reinforcement is required than the amount necessary in the form of mild steel bars, and that a corresponding saving is effected in railway charges, cartage, and handling.

(2) That, owing to the high bending resistance of the steel, the bars are far less liable than ordinary to be bent in transit or after delivery.

(3) That the mechanical bond saves the cost of mechanical preparation such as fish-tailing and hooking, and furnishes additional security against any tendency of the steel to slip in the concrete.

(4) That every bar is self-tested by the mechanical process of twisting, all mill scale being at the same time removed.

OZONAIR SYSTEM OF AIR PURIFICATION.

MANY of our readers have doubtless appreciated the long-needed improvement recently effected in the Central London Railway tubes by the system of ventilation and air purification installed by Ozonair, Ltd., of Westminster.

The equipment consists of a separate and independent plant at each station with the exception of that at Shepherd's Bush, where the end of the tunnel communicates with open air.

Each plant includes an ozone generator, whence this active and allotropic form of oxygen is conveyed to the mixing chamber by a Sirocco pattern blowing fan, being there mixed with air drawn in through a cleansing screen.

From the outlet of the fan the ozonised air is blown down a main air trunk, discharging through outlets in the booking-hall and lavatories, and on the up and down platforms, the trunk terminating with outlets delivering into the tunnels.

The plants range in capacity from 5,500 to 18,000 cubic ft. per minute, and are capable of furnishing the total of more than 80 million cubic ft. of ozonised air every working day.

About one-third of the purified air is distributed along the platforms, and the remainder is delivered directly into the tunnels.

It is interesting to note that, according to the results ascertained by Mr. W. J. Dibdin, F.C.S., the air of the Central London Railway now contains considerably fewer organisms than the dust-laden air of the street, and that the air admitted by the Ozonair inlets is practically free from germs.

Our readers, who are more concerned with domestic than with railway ventilation, may be reminded that Ozonair apparatus is made in sizes suitable for employment in dwelling houses and buildings of every kind where pure air is a desideratum.

In most cases a regular supply of electric current is necessary for operating the apparatus, but small ozone generators are made which can be worked from batteries, and are therefore suitable for service in places where public supplies of electricity are not available.

ENGINEERING NOTES.

Port of Valparaiso. IT is stated that Messrs. Pearson & Son have secured the contract, upon their tender of 2,600,000*l.*, for the construction of the new harbour at Valparaiso. The works, which will occupy seven years, comprise a breakwater 945 ft. in length, quay walls 2,066 ft., and 690 ft. long, a coal wharf 656 ft. by 100 ft., and a jetty 820 ft. by 328 ft. The harbour will be available for the berthing of the biggest modern vessels.

Reinforced Concrete: Piketty System. WE have received from Messrs. Paul Piketty & Co., of Bloomsbury, a copy of their illustrated handbook, which, like the analogous publications of other specialist firms engaged in reinforced concrete work, is a technical prospectus rather than a catalogue.

In a recent issue of the *Builder* the essential features of the Piketty system were described and illustrated, and at the same time the commercial methods of the firm were briefly stated.

The present handbook goes into these matters more fully, and also sets forth the formulæ conceived by M. Piketty some twelve years ago, and published in the treatise by MM. Berger and Guillerme in the year 1902, these formulæ being essentially similar to those afterwards adopted by the Royal Institute of British Architects' Committee, the London County Council, and other authorities.

Although practically unknown in the United Kingdom, the Piketty system has been employed to a considerable extent on the Continent, and from figures given in the handbook it appears that works to the extent of more than half a million sterling have been executed in France on this system of reinforced concrete.

The book includes a good selection of photographic views representing typical architectural and engineering structures, and concludes with a reprint of the proposed regulations of the London County Council for reinforced concrete construction.

THE BUILDING TRADE.

TRADE DISPUTES AND BUILDING CONTRACTS.

IN a recent article we referred to the subject of "Builders and Strikes," and dealt with the law relating to strikes as hitherto laid down, but the modern development of trade disputes and the general strike, with the consequent dislocation of business and trade, have raised questions that may yet have to be decided in the Law Courts, and pending the decision of these points it behoves those engaged in trade to be especially careful in protecting themselves by contract.

Before dealing with what are known as strike clauses in contracts, a word or two may be said on the subject of the law and the development of the secondary and general strike. The law, as was stated in our article of May 10, where a man has contracted to perform certain work in a prescribed time, without qualification, holds him bound to perform his contract, and a strike has not afforded him any excuse for a breach of his unqualified undertaking. At the time when the decisions were delivered upon which this statement of the law is based strikes were generally the outcome of a dispute between an employer and his own workmen, and sect. 3 of the Conspiracy and Protection of Property Act was interpreted not to apply to civil actions at all—Quinn *v.* Leatham (1901). In the headnote to the decision of the House of Lords in this case, in the "Law Reports," it is stated that the words in that section, "trade dispute between employers and workmen," "do not include a dispute on trade union matters between workmen who are members of a trade union and an employer of non-union men who refuses to employ union men. *Semble*, the words are restricted to disputes between an employer and his own workmen." If this accurately represents the effect of the judgments delivered in this case, which is one of considerable complication, it is apparent that not only did the Conspiracy Act afford no protection from civil actions, but that it also left the criminal law available where unions intervened to interfere between employer and employed to procure breaches of contract. The Royal Commission on Trade Disputes so interpreted the Act, and also considered that it afforded no protection in the case of secondary strikes. However this may be, it is important to observe that the Trade Disputes Act has altered the law, enabling the trade unions to take part in trade disputes and depriving the public of their civil right of action where injury has been sustained which hitherto would have been actionable.

Strikes have therefore assumed different characteristics and proportions, and it yet remains to be seen whether the law as regards contracts will remain the same as it was when by reason of the law of conspiracy strikes were limited to disputes between an employer and his own workmen, and a right of action existed whereby an employer could protect his own interest. So long as strikes were so limited, it could well be argued that some means could be devised by the employer for carrying out his contract if he chose to settle the dispute or to obtain labour or material from other sources; but such a consideration can no longer apply in the case of labour disputes such as the coal strike or the railway strike, which paralyse trades wholly unconnected with the dispute, and it remains to be seen whether relief will not be granted by the Courts to those who have been unable to carry out their contracts by reason of a total failure in the means of transport or of the means of production such as coal. Pending a decision of these knotty points, however, it is to the interest of builders and contractors to protect themselves and to avoid litigation by the insertion of adequate strike clauses in their contracts, and the object we have in view in the present paper is to draw attention to the inadequacy of the clauses now commonly inserted in building contracts to protect contractors from liability in the case of secondary or general strikes. In the Form of Agreement for Building Contracts issued by the Royal Institute of British Architects, in Art. 25, which provides for extension of time, the words with reference to strikes are, "or by reason of any local combination of workmen or strikes or lock-out affecting any of the building trades."

This clause appears too narrow to meet the exigencies of the present time. The word "local" would seem undesirable, as it might be interpreted to govern the whole clause, and the expression, "affecting any of the building trades," appears capable of the construction that the strike or lock-out must affect the conditions of employment in the building trades. Neither the railway strike nor the coal strike fulfilled either of these conditions; the coal strike in particular could not be deemed in any sense "local" in certain localities, whilst, although both these strikes may have occasioned unavoidable delay in the execution of building and engineering contracts, neither of them affected the conditions of employment in the building trade.

Other forms of strike clauses found in text-books are equally inapplicable in many cases to modern strike developments. Thus "Provided always that in case the builder shall be prevented by any strike among his workmen" ("Emden on Building Contracts," p. 377), or "In case of any delay in the execution of the work caused by a general strike combination or lock-out of artificers or workmen employed in any of the building trades, or of workmen employed in the preparation or manufacture of materials intended for the work" (Emden, p. 396), are clauses which make no provision for dislocation of labour through a railway or coal strike, whilst even the clause set out in our recent article, "in case of combination of workmen or strikes or lock-outs affecting the building trades," is open to the second objection which we urged against the clause sanctioned by the Royal Institute.

We trust that we have said enough to draw the attention of members of the Royal Institute and of builders and contractors to the importance of considering a revision of the strike clauses in building contracts, and if attention be once directed to the matter possibly combined consultation may produce a really satisfactory clause. We may, however, perhaps venture to suggest that what it is desirable to provide against in such clauses nowadays is not the existence of a trade dispute in any particular trade, but for exemption from liability in case of unavoidable delay occasioned by any trade dispute whatever; in other words, the test should be the inevitable delay occasioned by that new form of *force majeure*, the trade dispute. The architect under Art. 25, or the arbitrator under Art. 32, would have no more difficulty in determining the question of fact whether the works had or had not been delayed by the direct consequences of a strike outside the trade than is experienced at present in deciding whether a strike inside the trade was the cause of the delay.

In view of the magnitude and frequent occurrence of trade disputes, a question may also be raised whether in building contracts an absolute clause against liability from delay through trade disputes should not be introduced apart from the clause permitting an extension of time to be allowed by the architect. Upon this point we offer no opinion, but it must be remembered that under Art. 9 of the Institute's Form of Contract in these days of trade unionism the contractor may have a dispute forced upon him by the action of the architect. If the architect quite reasonably, under Art. 9, requires the dismissal of a person employed by the contractor, and that person happens to be a trade unionist, a general strike may at any moment be the result. A strike on a railway was recently occasioned by the removal of a signalman from one end of a station to the other.

The legislature has licensed strikes on a larger scale than heretofore, but in protecting trade unions has omitted to protect the trader. In the absence of statutory protection it therefore behoves those in trade carefully to provide for the new conditions of the labour market and to protect themselves as far as they are able in their contracts from a liability which may otherwise be forced upon them from causes wholly outside their control.

THE TRADE UNION BILL.

IT seems almost incredible that after the experiences of the past twelve months the Government should have reintroduced their Trade Union Bill, which first made its appearance last year, and which is designed to overrule the Osborne decision and to enable the trade unions to become militant political organisations.

With the political aspect of this question we are in no way concerned; but, as we pointed out last year in articles on June 2 and 30, there are grave objections to this Bill on other than strictly political grounds. It strengthens the hands of those societies which we should have thought had been demonstrated by the recent railway and coal strikes to be already too powerful, and it prejudices the position of non-union and independent men, rendering them liable not only to severe duress at the hands of trade societies, but complicating their position by importing political considerations into the relationship between workmen and workmen and employers and workmen. The trade unions already have power to prevent any man who is not willing to join them as trade societies from obtaining work or plying his avocation, but if this Bill becomes law a man willing to embrace trade union principles so far as trade relations are concerned may yet find himself ostracised by reason of his political convictions, and thus political pressure under the Bill will arise not only in connexion with Parliamentary elections, but also in respect to County Council elections, District Council elections, Parish Council elections, and even to elections to Boards of Guardians. The Bill is the same as that introduced last year, the only alteration being that it no longer provides that trade union funds may be expended on the maintenance of Members of Parliament, because this has since been made a charge upon the taxpayers; but with this exception in all the above elections the unions can expend money in connexion with the candidature and maintenance of persons seeking or obtaining office, and upon the holding of meetings and the distribution of literature, and thus these societies which have already been granted powers and immunities possessed by no other organisations in the country are encouraged to expand into political organisations, and trade unionism can hold up trade while it creates a political pandemonium at the election of even a parish councillor or member of a Board of Guardians. It is in this connexion that the most important point arises. Will sect. 4 of the Trade Disputes Act apply to acts done by trade unions in furtherance of the enlarged number of objects permitted by this Bill? It will be remembered that subsect. (1) of this section provides that "an action against a trade union, whether of workmen or masters, or against any members or officials thereof, on behalf of themselves and all other members of the trade union in respect of any tortious act alleged to have been committed by or on behalf of the trade union, shall not be entertained by any Court." In this subsection no mention is made of the acts thus privileged being limited to acts done "in contemplation or furtherance" of a trade dispute, and as we showed in our recent note to Vacher & Sons *v.* London Society of Compositors, April 12 last, it has not yet been judicially decided whether this subsection applies generally or with that limitation. There is even some doubt whether a trade union cannot publish a libel unconnected with a trade dispute and yet claim immunity from action under the above subsection. This point at least should be made clear, and the unions be made amenable to the law in respect of acts done under this Bill before the enlarged powers proposed are conferred upon them.

A second point is one raised last year by the Employers' Parliamentary Council. The Bill purports to secure the rights of those members of the unions who do not desire to contribute to political objects, and it provides in Clause 3 (*c*) that a member who claims exemption shall not be excluded from the benefits of the union or be placed under any disability. The Employers' Parliamentary Council asked how is a member who claims

exemption to obtain any redress if he is deprived of benefits, seeing that under sect. 4 of the Trade Union Act the Courts cannot enforce agreements as to benefit? Since this question was asked the House of Lords in Russell *v.* Amalgamated Society of Carpenters (the *Builder*, April 5 last) have affirmed the decisions that the Courts cannot interfere to enforce agreements as to benefit. It is, therefore, clear that if this Bill is to become law some provision must be inserted granting access to the Courts to a member of a trade union who has been deprived of benefits from the union in defiance of the provisions of the Bill simply because he objects to contribute to the political funds of the union.

Lastly, by Clause 3 (*a*) a majority "of the members voting" can determine whether the funds of the unions are or are not to be applied to political purposes. For a resolution of this character surely the unions should be compelled to obtain a majority of their members.

There are other grave objections to the Bill (for instance, should the unions who are to be entrusted with administrative powers under the Insurance Act be political societies?), but we have confined our observations to those of paramount importance.

LABOUR IN THE BUILDING TRADE.

AT a Conference between the Edinburgh Master Builders' Association and operative joiners, the request of the joiners for an increase of pay and other alterations on working rules was discussed. The joiners asked for an increase of 1d. per hour, from 9d. to 10d. The master builders expressed the desire to see their employees as well off as possible, and would gladly have agreed to the increase asked had the state of the property market justified such an advance. In the circumstances they felt they would not be justified in agreeing to more than ½d. advance. A request to stop work at 12 noon on Saturdays was also preferred by the operatives. Several of the employers present expressed themselves strongly in favour of this, but it was felt that sufficient unanimity among the trades did not exist to enable this alteration to work smoothly this year, and the joiners, being usually responsible for seeing premises under construction or repair safely locked up, were strongly pressed to leave this over till next year, when, if the co-operation of the other trades were secured, it was thought this might be agreed to on behalf of the whole building trades. The joiners ultimately agreed to these suggestions. Several other points were discussed, and alterations in existing rules agreed to, which it was hoped would, by making these points more clear, result in their more strict observance. The new regulations come into force on June 1 next, and hold good for one year.

GOVERNMENT CONTRACTS.

THE following tenders have been accepted during the past month by the Government Departments named:—*Admiralty, Works Department:* Works service: additional coast-guard houses at Kildonan—Messrs. R. Aitken-head & Son, 37, Trafalgar-street, Greenock. *War Office:* Works services: alterations to married quarters, etc., Fulwood Barracks, Preston—Messrs. R. Thompson & Morris, 13, Dalton-square, Lancaster; conversion of cottages, Warley—Mr. S. Cronin, Queen-street, Warley; erection of army ordnance depôt buildings, Tidworth—Messrs. Wort & Way, Castle-street, Salisbury; erection of barrack block, cook house, latrines, etc., Army Service Corps Barracks, Bordon—Executors of Mr. J. B. Seward, Crown Works, Wokingham; erection of forges and shoeing, Longmore Camp—Messrs. Wigginton & Sons, St. Thomas-street, Portsmouth; erection of new sergeants' mess, Lydd—Mr. T. T. Denne, Walmer, Kent; installation of electric light and power, military hospital, York—Messrs. G. E. Taylor & Co., 8, Bush-lane, E.C.; periodical works services at Bulford Camp—Mr. D. E. Hutton, Briggate, Shipley, Yorks; repairs and maintenance of war department buildings at Bordon—Messrs. Martin, Wells, & Co., Aldershot; Colchester—Mr. F. R. Hipperson, Northumberland-street, Norwich; Warley—Mr. S. Cronin, Queen-street, Warley; Woking—Mr. E. C. Hughes, Albion Works, Wokingham. *Crown Agents for the Colonies:* Steel bridge-work and steel-framed building—Horseley Company, Ltd., Tipton, Staffs; cement—Associated Portland Cement Manufacturers, Ltd., 8, Lloyd's-avenue, E.C.; Messrs. Martin, Earle, & Co., Ltd., 139, Queen Victoria-street, E.C.; Messrs. Wouldham Cement Company, Ltd., 35, Great St. Helens, E.C.; stoneware pipes—Albion Clay Company, Ltd., 38, Victoria-street, S.W.; carriage washing sheds—Messrs. F. Morton & Co., Ltd., 17, Victoria-street, S.W.; goods sheds—Messrs. A. & J. Main & Co., Ltd., 31, Budge-row, E.C.; rubber sheds—Messrs. F. Morton & Co., Ltd., 17, Victoria-street, S.W. *Office of Works:* Contracts for ordinary works and repairs: Birmingham—Messrs. John Bansley & Sons, 102, Ryland-steet, Birmingham; Bristol and Avonmouth—Mr. F. Chown, Montpelier, Bristol; Cardiff—Mr. J. Thomas, Mardy-street, Cardiff; Duke of York's School, Dover—Messrs. G. H. Denne & Son, Deal; Hampton Court, Kew, and Richmond—Messrs. J. Mowlem & Co., Ltd., Grosvenor Wharf, Westminster, S.W.; Leeds—Messrs. J. Wood & Son, Bank-buildings, Hyde Park-road, Leeds; Leicester—Messrs. J. E. Johnson & Sons, Ltd., 90, High Cross-street, Leicester; Liverpool—Mr. J. Williams, 70, Collingwood-street, Liverpool; Manchester—Messrs. W. D. Scott & Co., 126, Broughton-street, Cheetham, Manchester; Newcastle-on-Tyne—Messrs. Kirk & Brown, Byker Bridge, Newcastle-on-Tyne; Nottingham—Mr. G. A Pillatt, Sherwood-street, Nottingham; Sheffield—Messrs. Ash, Son, & Biggin, Ltd., Furnival-street, Sheffield; Southampton—Avery Brothers, Staple-gardens, Winchester; Windsor—Messrs. Wellman Brothers & Co., Peascod-street, Windsor; Messrs. Hollis & Sons, 59, St. Leonards-road, Windsor; builders' work: erection, Board of Agriculture—Messrs. Higgs & Hill, Ltd., Crown Works, South Lambeth-road, S.E.; alterations, Bradford Labour Exchange—Messrs. T. Obank & Son, Thackley, Bradford; erection, Bury County Court, Inland Revenue, Customs, and Excise—Mr. J. Tinline, Parker-street Saw Mills, Bury; re-drainage Mount Pleasant Parcel Office—Messrs. Galbraith Brothers, Ltd., Camberwell-green Works, S.E.; adaptation, Sheffield Labour Exchange—Messrs. J. Fidler, Ltd., Corporation-street, Sheffield; heating, South-eastern District Post-office extension—Messrs. G. N. Haden & Sons, Lincoln House, Kingsway, W.C.; road materials for Royal parks—Mr. H. Boyer, Terminus Wharf, Paddington, W.; Messrs. W. Boyer & Sons, Irongate Wharf, Paddington-basin, W.; Messrs. Thomas Clayton (Paddington), Ltd., 9, South Wharf-road, Paddington, W.; Messrs. Croft Granite, Brick, and Concrete Company, Ltd., Croft, near Leicester; Messrs. Fry Brothers, Lion Wharf, Greenwich; Mr. H. J. Greenham, Rosebank Wharf, Fulham, S.W.; Messrs. London and Rochester Barge Company, Ltd., 2, New London-street, E.C.; Messrs. J. Mowlem & Co., Ltd., Grosvenor Wharf, Westminster, S.W.; Messrs. Owen, Older, & Sons, Upper and Island Farms, West Molesey, Surrey; Messrs. H. Sabey & Co., 23 and 31, Willesden-lane, Kilburn, N.W.; Mr. William Sharpe, jun., Victoria Works, Ship-lane, Mortlake; The United Stone Firms, Ltd., 2, Bristol-chambers, Nicholas-street, Bristol; Messrs. Samuel West, Ltd., 40, Trinity-square, E.C.; wainscot panelling, fittings, etc., Courts of Justice extension—Messrs. T. H. Kingerlee & Sons, 35, Queen-street, Oxford. *General Post Office:* Laying lines of pipes and pneumatic tubes, Finsbury-pavement, London-wall, etc., and laying lines of pipes, Bournemouth—Messrs. Airds, Ltd., 22, Queen Anne's-gate, S.W.; laying line of Syke's ducts, London to Aylesbury and St. Albans (sect. IV.)—Mr. W. Dobson, Yeaman-lane, Edinburgh; (sect. V.)—Airds, Ltd., 22, Queen Anne's-gate, S.W.; (sect. VI.)—Mr. W. Dobson, Yeaman-lane, Edinburgh. *Broadmoor Asylum:* Bricklayers' and plasterers' materials—Messrs. Warmsley & Co., Ltd., Reading. *Commissioners of Public Works, Ireland:* Building works: erecting and furnishing Carrownaganonagh National School, Co. Donegal—Messrs. McMullan Brothers, Kilcar, Co. Donegal; erection new smithy and foundry at Royal College of Science, Dublin—Messrs. McLaughlin & Harvey, Ltd., Dartmouth-road, Dublin. *Metropolitan Police:* Carrying out alterations at West Hampst Police-station—Messrs. J. Chessum & Son, 7A, South-place, E.C.; erection of new police-station at Harlesden—Messrs. G. Godson & Sons, Pembroke Works, Kilburn-lane, W.

GENERAL BUILDING NEWS.

GARRISON CHURCH, TIDWORTH.

The new church of St. Michael has been erected at a cost of 3,500*l.* from the designs of Mr. E. D. Hoyland, architect, of London. The altar, rails, reredos, panelling of the sanctuary walls, clergy and choir-stalls, and pulpit are all of Burmese teak, of rich tone in its natural colour, designed in the Renaissance style by Mr. C. E. Ponting, F.S.A., of Marlborough. The church was dedicated on the 3rd inst., by Bishop Taylor Smith, Chaplain-General to the Forces.

CATHOLIC CHURCH, LONDON.

His Eminence, Cardinal Bourne, Archbishop of Westminster, on the 17th inst., laid the foundation-stone of the new Catholic Church, Desborough-street, Harrow-road, now being erected by Messrs. E. A. Roome & Co. The architect is Mr. E. H. N. Major.

GIRLS' HIGH SCHOOL, STROUD.

Mr. R. S. Phillips, of Gloucester, is the architect for this school, which has been erected in the Georgian style and constructed of brick-work with Minchinhampton stone dressings, oak cornice and tiled roof. The contractors were:—Building, Mr. A. S. Cooke, Stroud; heating, Mr. R. Woodyatt, Stroud; gas lighting, Mr. E. Pratt, Wallbridge, Stroud.

NEW BUILDINGS IN LONDON.

Proposed extensions to church, Walworth, S.E.; Clerk to the Wardens, St. John's Church, Walworth, S.E. Out-relief-station, Aragon-road, East Ham, E. (2,675*l.*); Strand Building Company, builders, 200, Strand, W.C. Factory, Vauxhall-walk, Lambeth, S.E. (30,000*l.*), for Messrs. Schweppes, Ltd.; Mr. A. F. Briggs, architect, Queen Victoria-street, E.C. Motor engineering works, Selhurst-road, South Norwood, S.E. (1,676*l.*); Messrs. J. C. Arnaud & Son, 149, High-street, Bromley. Extensions to Princes Hotel and Restaurant, Jermyn-street, W.; Messrs. Emden, Egan, & Co., architects, 2, Lancaster-place, Strand, W.C.; Messrs. Holliday & Greenwood, builders, Brixton, S.W. Extensive buildings to be used as offices, etc., Pall Mall, S.W.; Messrs. White, Druce, & Brown, agents, 9, Brook-street, Hanover-square, W.

TOWN HALL, MUNDESLEY.

This hall is to be erected at a cost of about 600*l.* from the designs of Mr. G. M. Silley, architect, of London, and the building will provide accommodation for 300 people. The contractor is Mr. S. A. Randall, of Mundesley.

TERRITORIAL DRILL HALL, CRANBROOK.

Mr. J. W. Little, F.R.I.B.A., of Tonbridge, is the architect for the new drill hall which has been erected for the use of the A Company of the 5th Buffs. The hall is 60 ft. by 30 ft., and there is also a lecture-room, orderly-room, armoury, etc. The builders were Messrs. Marshall & Son, of Cranbrook.

EMPIRE AND HIPPODROME, CHELMSFORD.

The new Chelmsford Empire and Hippodrome, which is to be erected on the Springfield-road, Chelmsford, has been designed by Mr. Noel Dawson, architect, of Chelmsford, and the building will provide accommodation for 933 persons.

THEATRE, COWDENBEATH.

It is proposed to erect a theatre in the High-street near the junction of Foulford-street, at a cost of about 6,000*l.* The architects for the work are Messrs. Bell & Wilson, of Dunfermline.

TRADE NEWS.

Under the direction of Mr. H. Green, M.S.A., Leigh-on-Sea, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air-inlets, has been applied to the new Public Hall, Leigh-on-Sea.

The Carnarvon Catholic Schools are being supplied with Shorland's patent warm-air ventilating Manchester grates, by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

AT Tuesday's meeting of the London County Council the following applications under the London Building Acts were dealt with. (The names of the applicants are given in parentheses):—

Width of Way and Cubical Extent.

Strand.—Erection of a building upon the site of Nos. 18, 19, 20, and 21, Haymarket, and Nos. 1, 3, and 5, Orange-street (Mr. W. Cave). —Consent.

Uniting of Buildings.

City of London.—Uniting of Nos. 58, 59, and 60, Paternoster-row, and Nos. 61 and 63, St. Paul's-churchyard, City (Mr. C. W. Oatley for Messrs. J. Lyons & Co., Ltd.).—Consent.

Norwood.—Uniting of Nos. 62 and 64, Ferndene-road, Herne-hill, by means of an opening at the ground-floor level (Mr. H. C. Morrell). —Consent.

Wandsworth.—Uniting of Nos. 412, 414, and 416, Streatham High-road (Messrs. Herring, Son, & Daw for Messrs. P. B. Cow & D. Cow). —Consent.

Lines of Frontage and Projections.

Dulwich.—Porch at No. 5, Wood-vale, Dulwich (Messrs. Watson & Ellwood for Miss Fox).—Consent.

Hackney, Central.—Building on the western side of Clifton-grove, Graham-road, Hackney (Mr. C. G. F. Rees for the Committee of the German Hospital).—Consent.

Hampstead.—Cycle house in front of No. 12, Hollycroft-avenue, Hampstead (Mr. N. Hoskins for Mrs. M. C. Hennell).—Consent.

Islington, South.—Projecting showcase at No. 243, Upper-street, Islington (Mr. H. F. P. Usher).—Consent.

Lewisham.—Buildings on the western side of Brockley-rise, Lewisham (Mr. C. T. Standen).—Consent.

Norwood.—Porches in front and covered ways at the rear of Nos. 66, 68, 70, 72, 74, and 76, Ferndene-road, Norwood (Mr. H. C. Morrell).—Consent.

St. George, Hanover-square.—Wooden screen at No. 35, Warwick-street, St. George, Hanover-square (Messrs. C. E. Fry & Sons).—Consent.

St. George, Hanover-square. — Projecting clock at No. 43, Dover-street, Piccadilly (Greenwich Time, Ltd., for Messrs. A. Webster & Co.).—Consent.

St. George, Hanover-square.—Buildings upon a site abutting upon Vauxhall Bridge-road, Wilton-road, and Gillingham-street, Westminster (Mr. E. Wimperis for His Grace the Duke of Westminster).—Consent.

Strand.—Projections at a building upon the site of Nos. 3 and 4, Coventry-street, Westminster (Mr. H. J. Blanc).—Consent.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ACCRINGTON.—Extensions to works, Dale-street, for Messrs. J. W. Woods & Co.

Alnwick.—Parish hall, Painter-hill; Mr. W. H. Knowles, architect, Newcastle-on-Tyne.

Ballymena.—Proposed hospital at workhouse; Architect, Guardians' Offices, Ballymena.

Barrow-on-Soar.—Alterations at grammar school (1,400*l.*); Mr. W. A. Brockington, Secretary, Education Committee, Leicester County Council, Leicester.

Batley Carr.—Brass-foundry, etc., Jack-lane, for Messrs. Brown & Naylor.

Beith.—Additions to cabinet works for the West of Scotland Furniture Manufacturing Company.

Belper.—Mission church (2,000*l.*); Vicar, St. Peter's Church, Belper.

Bentley (Yorks).—Hotel, Wath House-lane (7,000*l.*); Manager, John Smith's Tadcaster Brewery.

Bexhill. — Institute; Vicar, St. Mark's Church, Bexhill.

Birkenhead. — Alterations to premises, Grange-road; Secretary, Y.M.C.A., Birkenhead.

Birtley.—Additions, school (2,000*l.*); Mr. W. Rushworth, architect, Shire Hall, Durham.

Bishop Auckland.—Extensions to infectious diseases hospitals at Tindal-crest and Helmington-row (6,000*l.*); Mr. R. B. Thompson, architect, Market-place, Bishop Auckland.

Blackburn.—Roman Catholic Church: Vicar, St. Peter's, Mill-hill, Blackburn.

Blaina.—Enlargement of cottage hospital; Mr. E. A. Johnson, architect, Abergavenny.

Boston.—Shops, West-street, for the Boston Industrial Co-operative Society.

Burton.—Drill hall; Mr. George Hodges, builder, Honnington-road, Burton-on-Trent.

Canterbury.—Laundry at workhouse (2,000*l.*); Mr. H. Doré, architect, 82, Castle-street, Canterbury.

Cathcart.—Office block, etc., Newlands-road, for Messrs. G. & J. Weir, Ltd., Holme Foundry, Cathcart.

Chichester.—Extensions to infirmary; Mr. F. J. Privett, builder, Cottage-grove, Southsea.

Darby End (Netherton).—Church; Vicar, St. Peter's Church, Darby End.

Darwen.—Extensions to Heyfold Mill for Messrs. Harwood Brothers; mill, Dewhurst-street, for the Albert Cotton Spinning Company, Ltd.

Delph.—Proposed dyeworks for Messrs. Astbury, Pickford, Ltd., Lumb Mill, Delph.

Dewsbury.—Parochial hall; Vicar, St. John's Church, Dewsbury.

Dukinfield.—Sheet metal works, Park-road, for Messrs. Manwood, Miller, & Co.

Fareham (Hants).—Nurses' dormitories, at Asylum (1,200*l.*); Mr. W. J. Taylor, Surveyor, The Castle, Winchester.

Ferryhill.—Miners' institute: Messrs. J. T. Douglas & Son, builders, Close House, Durham.

Frizinghall.—Church schools; Vicar, St. Margaret's, Frizinghall.

Glasgow.—Addition to Co-operative Bakery Society's bakery, McNeil-street; Messrs. Bruce & Hay, architects, 26, West George-street, Glasgow. Business premises, Trongate; Mr. A. B. M'Donald, Surveyor, Burgh-buildings, Glasgow. Bakery, Cranston-street; Messrs. Salmon, Son, & Gillespie, architects, 53, Bothwell-street, Glasgow. Alterations and additions to 370, Pollokshaws-road; Messrs. Stewart & M'Donald, Ltd., 18, Buchanan-street, Glasgow.

Gloucester.—Extension of parish hall; Vicar of Acton, Gloucester.

Greenock.—Sheet-iron welding shop for Messrs. Scotts' Company, Ltd., Greenock.

Gwyafeni. — Isolation hospital; Surveyor, Rural District Council Offices, Gwyafeni.

Hanley.—Electric theatre; Mr. W. A. Baynes, architect, Fountain-buildings, Hanley.

Harrogate.—Additions to church; Vicar, St. Wilfred's Church, Duchy-road, Harrogate.

Houston.—Powder magazine off Houston Wood for Messrs. Hunter & Warren.

Jarrow.—Drill hall, Beech-street; Durham Territorial Force Association.

Kilbirnie.—Additions to factory for Messrs. W. & J. Knox, Ltd.

Kilwinning.—Post-office; H.M. Office of Works, Edinburgh.

Kinning Park (Glasgow).—Re-erection of premises for Messrs. William Motherwell & Co., rivet, screw, and chaplet makers, Kinning Park.

Leith.—Six tenements of houses, Hermitage Park, for the Lochend Building Company.

Liverpool.—Reconstruction of wooden shed, Salisbury-dock (1,760*l.*); the Mersey Dock and Harbour Board. Alterations and additions to Cottage Homes Infirmary; Mr. C. H. Lancaster, architect, Brougham-terrace, West Derby-row, Liverpool.

Lowestoft.—Plans have been passed for additions to works, Alexandra-road, for Messrs. J. W. Brooke & Co., Ltd.

Manningham.—Church; Vicar, St. Luke's Church, Manningham.

Merthyr Tydfil.—Free library and public offices adjoining Town Hall; Messrs. Johnson & Richards, architects, Abergavenny.

Morley.—Club premises for the Trustees, Bruntcliffe Working-Men's Club. Additions to mill for the Morley Cloth Finishing Company.

Nottingham.—Addition, mechanics' institute (3,000*l.*); Messrs. Bromley & Watkins, architects, Prudential-buildings, Nottingham. Church, Sherwood-road (8,000*l.*); Messrs. Sutton & Gregory, architects, Angel-row, Nottingham; Mr. J. Wright, builder, Wilford-crescent, Nottingham.

Nuneaton.—Extensions to electricity works (1,355*l.*); Messrs. George Smith & Sons, builders, Chilvers Coton.

Parkhead (Glasgow). — Labour Exchange, corner of Sorby and Southbank streets; Mr. George Dunsdale, 11, Dalmarnock-road, Glasgow.

Penzance.—School; Mr. F. Latham, Surveyor, Town Hall, Penzance.

Pokesdown. — Proposed fire-station; Mr. F. W. Lacey, Surveyor, Town Hall, Bournemouth.

Ramsden Bellhouse.—Houses (982*l.*); Mr. H. R. Bird, architect, St. Thomas's-gate, Brentwood.

Rochdale.—Extensions to electricity works: Messrs. R. & T. Howarth, Royds-street, Rochdale.

Salford. — Alterations to Union Offices (5,338*l.*); Mr. R. Carlyle, builder, Old Trafford.

Sherburn.—Store premises for the Sherburn-hill Co-operative Society; Messrs. Morris & Sons, builders, Howden-on-Tyne.

Shoreham. — Proposed board-room and offices; Clerk, Guardians' Offices.

Sketty (Glam).—Mission church; Vicar, St. Paul's Church, Sketty.

Southbroom (Wilts).—Additions to church (1,500*l.*); Vicar of Southbroom.

Swansea.—Plans have been passed as follows:—Six houses, Milwood-street, for Mr. George Davies; five houses, Hawthorne-avenue, for Mr. William Thomas; five houses, Vicarage-road, Morriston, for Mr. Edward Harris; forty-five houses, Pentrepoeth-road, Morriston, for Messrs. Thomas & Jones; eight houses, Middle-road, Cwmdu, for Mr. C. Gustavus.

Tanfield Lea (Durham).—Church; Architect, Mr. J. W. F. Phillipson, 8, Grainger-street, Newcastle-on-Tyne.

Wallsend.—Offices for the Wallsend and Hebburn Coal Company.

Wrenbury.—Proposed cheese factory for Cheshire Milk Producers, Ltd.

Wolverhampton.—Enlarging church (2,500*l.*): Vicar, St. Jude's Church, Wolverhampton. Additions to drill hall; Mr. George Hodges, builder, Honnington-road, Burton-on-Trent.

Worcester.—Theatre Royal; Mr. V. Rowe, architect, Foregate, Worcester; Messrs. Stokes Brothers, Tybridge-street, Worcester.

* See also our list of Competitions, Contracts, etc., on another page.

METROPOLITAN ASYLUMS BOARD.

AT the fortnightly sitting of the Board on Saturday, amongst the matters dealt with were the following:—

Western Hospital.—The tender of Mr. M. McCarthy, of 155, King's-avenue, Clapham Park, of 1,489*l.*, was accepted for cleaning and repair work at the above hospital.

Brook Hospital.—Subject to the consent of the Local Government Board, it was decided to provide balcony accommodation on four ward pavilions at Brook Hospital at an estimated cost of 790*l.*

North-Western Hospital.—The Local Government Board, having asked to be furnished with the details of proposed expenditure on drainage works at the above hospital, the Hospitals Committee submitted a report showing that the estimate of 471*l.* 19s. was made up by the provision of bedpan and scalding sinks, hot-water supply to several wards, drainage and incidental work.

Disinfection of Sewage.—It was decided to ask the Greenwich Borough Council to assent to the discontinuance of the practice of treating the sewage of Brook Hospital with permanganate of potash before it enters the public sewer, as the Medical Superintendent reported that, in his opinion, the process is quite inefficient as regards any true disinfection.

METROPOLITAN WATER BOARD.

AT the monthly meeting of this Board last Friday, the following matters were dealt with:—

Improvement of Supplies.—Estimates of 5,300*l.* for the improvement of the Staines reservoir, and of 5,070*l.* to improve the supply to Wimbledon, were approved.

Future Supplies.—The Works Committee brought up a recommendation to authorise them to prepare plans and estimates for the construction of a reservoir at Littleton with a capacity of 3,500 million gallons. This is part of a scheme for carrying out the new reservoirs authorised by the Boards Act of last year, the whole of which, it is estimated, would cost 3,481,900*l.* After discussion the matter was adjourned.

Chingford Reservoir Buildings.—It was decided to authorise the Works Committee to accept tenders for the erection of the proposed pumping-station, gas-producer house, and two cottages, at the Chingford Reservoir Works, the estimate for which is 548,000*l.*

LONDON COUNCILS.

Barnes.—Bexhill-road, Mortlake, and Nassau-road, Barnes, are to be made up as new streets. The following works are to be carried out, and application is to be made to the Local Government Board for sanction to borrow 920*l.*, the total cost of such work:—Kerbing, paving, and channelling Fanny-road, Barnes, estimated cost, 263*l.*; paving Eleanor-grove, Barnes, 95*l.*; paving portion of Fitzgerald-avenue, Mortlake, 117*l.*; kerbing, paving, and channelling portion of Lonsdale-road, Barnes, 188*l.*; kerbing, paving, channelling, and making-up path in portion of Temple Sheen-road, Mortlake, 175*l.*; paving Earl-road, Mortlake, 50*l.* Electricity mains are to be extended at an estimated cost of 620*l.* Plans have been passed for Messrs. Cox & Taylor for the erection of four houses in Temple Sheen-road, Mortlake. Mr. G. E. Sturgis has lodged amended plans for the erection of eight houses in Gilpin-avenue.

Marylebone.—Alterations to cost 600*l.* are to be carried out at the electricity generating-station for the purpose of increasing the coal storage capacity.

Stepney.—Electricity mains are to be extended in four streets. An underground convenience is to be reconstructed at the junction of West India Dock, East India Dock, Commercial and Burdett roads, at an estimated cost of 1,350*l.* A new paving depôt in Narrow-street and Midland-street is to be provided at an estimated cost of 7,150*l.* Plans have been lodged with the London County Council by Mr. H. G. Leslie for the erection of a building at St. Boniface School, Union-street; also by Mr. H. G. Needham, for the erection of buildings in Harrison-court, Wheler-street, and Quaker-street.

Tring.—The Surveyor has been authorised to proceed with the work of kerbing and channelling in Aylesbury-road.

Watford (Urban).—The tender of Messrs. Bracey & Clark has been accepted, at 94*l.* 1s., for carrying out drainage works at Tolpits-lane

THE QUANTITY SURVEYORS' ASSOCIATION:

ANNUAL DINNER.

THE annual dinner of the Quantity Surveyors' Association was held on Monday at the Connaught Rooms, Great Queen-street, Kingsway, W.C., the President, Mr. C. W. Ball, in the chair. There were also present the Rt. Hon. Lord Mayor of Leeds (Mr. William Nicholson), Mr. H. A. Bartlett, President of the Institute of Builders; Mr. F. G. Rice, President of the Builders' Benevolent Institution; Mr. Dudley Bartlett, President of the Builders' Clerks' Benevolent Institution; Mr. James Wright, President of the National Federation of Building Trades Employers; and Messrs.

J. Aylott
H. A. Addiscott
H. H. Bartlett
J. Dixon Butler
H. P. Boulnois
C. L. Brighton
P. Bywaters
H. B. Bell
A. E. Bare
T. E. Bare
F. R. Betenson
H. R. Bird
A. S. Bennion
E. J. Burr
R. G. Bennett
G. Corderoy
A. W. S. Cross
S. Chatfeild Clarke
T. Costigan
T. J. Carless
H. Cubitt
J. Carmichael
H. R. Cowley
R. Charnock
H. C. W. Dod
A. Dixon
W. E. Davis
B. A. Elphicke
H. England
T. P. Figgis
H. Cornwall Garland
H. A. A. Gate
H. M. Hodgson
A. A. Hudson
W. R. Hood
F. W. Hingston
J. P. Hall
D. Harris
F. W. Harrison
J. Johnstone
F. W. Jeffery
C. A. Kennett
Walter Lawrance
P. Lawrance
W. M. Law
Alan E. Munby
H. Northcroft
B. E. Laine-Pearson
C. E. Pease
G. H. Parker
Alan Paull
E. J. Read
Henry Riley
E. Steel
C. H. Smart
E. H. Selby
H. B. Saunders
Herbert Shepherd
H. T. Sayer
A. J. Smith
J. M. Theobald
E. A. Thorne
E. Trower
T. S. Vickery
A. Needham Wilson
W. Hoffman Wood
J. Wood
A. J. Wood
H. J. West
Walter West
Henry Vale
Arthur G. Cross, Hon. Secretary.

The toast of "The King" having been honoured,

The Rt. Hon. the Lord Mayor of Leeds,
in giving the toast of "The Quantity Surveyors' Association," said he had had considerable experience of quantity surveyors, and he knew they were the best friends of contractors. There was a necessity for such an association as that of the Quantity Surveyors' Association—which he was told was in a flourishing condition—if they were to get a living wage and keep their heads above water. In the North there was a prevalent practice of the architect taking off his own quantities, and he did not think that was desirable, for in the consummation of a good building an architect, a skilled quantity surveyor, and a good contractor were wanted. He noticed that even County Councils sweated quantity surveyors, though there were municipalities which were not employing them at all. He had been fighting that question in the form of engineers *qua* architects, as he saw a great distinction between the work of the two professions. He was told that certain work could be as well done by the City Engineers as by an architect, but he thought that architectural work should be done by an architect. The proposal was rejected twice, and it was only at the third meeting that the principle was conceded. He wanted the Association to take its proper place and do its own fighting in this matter. He should like to express an opinion in regard to the work of contractors and say that he thought they must look forward to dearer prices. In both building and engineering trade had been very bad for the last three or four years, and the time had come, what with legislation, strikes, the increase in the cost and the lessened production of labour, when contractors would have to alter their prices. Contractors had in their minds certain prices which in the past had paid, but which would not pay now by 25 per cent. So when they were framing their estimates they should take into consideration that the old rates would not pay, and should make estimates that would enable them to make a good job.

The President,
in reply, said he regretted that two proposals he had made when he was elected had fallen through, *i.e.*, a conversazione and a visit to Portsmouth, where there were a good many interesting things to see. He was glad, however, that something had come of his wish that the Benevolent Fund should be put on a satisfactory basis. He asked for 40*l.*, but they had sent him 78*l.* The Council of the Association had had a busy year, and the ordinary member had no idea of the amount of work they got through; they had all kinds of communications from all sorts of people and authorities, who wanted information on almost every subject connected with surveying and the building trade generally. During the past year the Association had completed the revision of the articles of association, and the principal alteration was as to the introduction of a new class of membership, *i.e.*, the Associate, who must be twenty-two years of age, have passed the Association's examination or some corresponding similar examination, and give evidence of good training and experience. They thought the new class of members would be a success, for there were a good many young men who passed the examination who were not qualified by experience to act as fully accredited quantity surveyors at once, but after a few years of Associateship they would be qualified to become full members. The Association had passed a new by-law by which it was an offence for any member to do work under a limit of 70,000*l.* below the Association's schedule rate of charges, and they considered that was a very important matter. The Association had not issued this year another pamphlet on the standardisation of measurement, as two had already been issued. A sub-committee of the Association had been working in the matter with representatives of the Surveyors' Institution, and another meeting was to be held, and they could not say what the result would be, but the matter had been well considered, and it was hoped that the two bodies would take some joint action in the matter. The Association had a new Presidential badge, and he might mention the names upon it of the Past-Presidents, *i.e.*, Mr. Walter Lawrence, one of the founders of the Association; Mr. A. J. Gate, Mr. W. R. Hood, Mr. A. E. Harris, Mr. H. T. A. Chidgey, and Mr. Chatfeild Clarke. He was glad to say that they still had their Hon. Secretary, Mr. Cross, with them, and he should like to thank him for his valuable services. There had been considerable increase in the membership of the Association, and several leading surveyors were joining the Association, and the membership was a far-reaching one. They were doing good and useful work, and he thought they would be able to accomplish what they set out to do. When they were more firmly established and had enrolled all or nearly all the principal surveyors of the country they would be a power for good and their influence would be widespread.

Mr. H. M. Hodgson, F.S.I.,
in proposing the toast of "The Architects," said that it was their province and sometimes their unpleasant duty to criticise the architect's work on the scientific side, but on the artistic side their work was practically confined to those beautiful little sketches which adorned the margins of their bills which they sometimes used when words quite failed them to describe the full beauties of the design from which they had to take quantities; but even then the prudent surveyor added a note that these sketches were not to be regarded as details in any way, but merely rough approximate sketches put in to elucidate the text. If they had any leanings towards style it was towards the severely classical, and what they did not like was that "restlessness" in architecture of which they had heard, for it very often doubled their labour without increasing their fees. As a quantity surveyor he liked the three R's of architecture, *i.e.*, regularity, repetition, and rectangles. Fortunately, the true canons of art, he believed, required a certain symmetry and regularity in architecture, and those designs which looked most simple and regular on plan were generally those which worked out best. He had been struck by the great improvement which had taken place in the street architecture of London during the last twenty years, and that improvement was going on still. Great beauty and refinement characterised many of the buildings, which had taken the place of those which existed twenty years ago. Bricks and stucco were going down and marble and stonework were going up. Sometimes ferro-concrete buildings were put up, but he hoped they would not become too evident and that they would be decently clothed in a skin of masonry. What London would be like in fifty years' time if this improvement went on no one could say, and it was to be hoped that in that time there would be some body, on which architects would be represented, which would restrain and regulate the architecture of our streets so that there might be more uniformity and agreement. In this transitional period in the history of architecture we came across strange juxtapositions of buildings, especially as to scale, but no doubt that would right itself in the course of time. There was perhaps a tendency in the great scale of modern buildings in London to be too colossal, and the width of the streets designed for smaller buildings might not be satisfactory when the larger buildings took their place. He thought it was a very satisfactory thing that architects had been associated with the development of large building estates like those at Hampstead and Gidea Park, for that association had been entirely good, and in the course of time he hoped it would do something to change those dreadful suburbs of London with which they were acquainted. At Hampstead Garden Suburb there had been a great improvement in the way the estate had been developed.

Mr. A. W. S. Cross,
in reply, congratulated the Association on its flourishing position, and he hoped to see them extend their work and their sphere of influence. He hoped to see the day when it would be possible to exercise the principles of examination or some form of test of professional ability for quantity surveyors in the United Kingdom. In these days of competition, when it was the practice to admit all sorts into the professions, he thought they would agree that the professions which were open should be closed. Quantity surveyors were indispensable to architects, especially when the builder's bill of extras loomed large on the horizon. In their associated capacity they were equally useful, because when any urgent question relating to their duties and responsibilities and to their emoluments arose architects and others appealed to them to be put right. If they started any scheme for the statutory qualification of quantity surveyors they would find immense difficulties to encounter, both from legitimate and other practitioners, but if they persevered the effect would not fail to be good to the whole profession, and architects would be glad to know that quantity surveyors were all tried and competent men.

Mr. Henry Riley (Vice-President of the Association),
in proposing the toast of "The Contractors," referred to the introduction of new types of construction and to the work of specialists, remarking that building operations daily became more difficult for the contractor.

Mr. H. Arthur Bartlett (President of the Institute of Builders),
in response, referred to the trouble of strikes, actual and threatened, and said that the building trade would not stand the increase in wages proposed by the men to meet the increased cost of living, but they hoped the present difficulties would be got over. As to the sub-contractor trouble, it was a great pity that builders were not given more discretion and given the opportunity of doing a great deal of the work of the sub-contractor. If the present tendency went on builders would have to be called builders' merchants' agents instead of builders.

Mr. S. Chatfeild Clarke, F.S.I. (Past-President),
suitably proposed the toast of "The Visitors," coupled with the name of Mr. George Corderoy, F.S.I., who hoped that that evening would be the precursor of a closer intimacy between the two bodies which represent surveyors in the country. There had been a closer approximation, and that he welcomed and had always done his best to foster. He admired the energy which the Association had devoted to professional subjects, and he hoped that the cause which they all had at heart would be advanced. There were difficulties to surmount, but there were opportunities for those who wished to advance the interests of the profession.

The last toast was that of the health of the Hon. Secretary, Mr. Cross, proposed by Mr. A. A. Hudson, K.C., who referred to the admirable work carried out by Mr. Cross on behalf of the Association. Their Hon. Secretary had the satisfaction of seeing the growth

of the society, which was very marked. Not only had the Association grown, but it had done excellent work, and he did not know any profession which rendered such great assistance to the lawyer as the quantity surveyors' profession. He agreed as to fixing a minimum wage, but not a maximum. The members of the architectural profession, he believed, had fixed a maximum fee, which was a great mistake, and no other society he knew of did so except solicitors and cabmen.

Mr. Cross suitably replied, and the proceedings soon afterwards concluded.

LIGHTNING CONDUCTORS.

MR. W. T. HATCH, Engineer-in-Chief to the Metropolitan Asylums Board, has submitted the following interesting Report on the whole question of lightning conductors:—"Referring to the Memorandum of March 14, 1912, in which I was instructed to report upon the adequacy and efficiency of lightning conductors generally, I would remark that the usual impression appears to be that there is a great deal of uncertainty as to whether lightning conductors are useful or dangerous in connexion with the buildings to which they are attached. Perhaps a few words on the principle upon which lightning conductors work may explain matters.

Lightning, like every other force in nature, follows the path of least resistance. Buildings and trees are weaker or less resisting (electrically) than the air, therefore the lightning will go through them in preference to going through the air beside them; but if there be placed on these buildings paths that are electrically weaker, the lightning will pass along those paths in preference to going through the buildings. A line of metal forms the weakest or the least resisting path, and, therefore, to prevent lightning crashing through any building with destructive violence it is customary to place paths of metal for it to follow and call them lightning conductors, and if scientifically applied and maintained in good order they are safeguards against damage. But, like many other things that are simple in theory, the protection of buildings against lightning is, in practice, a somewhat difficult matter, requiring considerable knowledge and experience, for the question is generally complicated by there being already in and on the buildings lines of metal (such as gas pipes, water pipes, guttering, etc.) which, though not acknowledged as such, are more or less defective lightning conductors which have to be fully considered in obtaining an efficient system. A lightning conductor does not attract lightning any more than the other lines of metal do, and an exposed part of a building is liable to be struck whether there is a conductor on it or not, the only difference being that if there be an efficient conductor it will conduct the flash harmlessly to earth, but if there is none the flash will force its way destructively through the structure.

So far as figures are available it appears that in England 400 buildings are damaged by lightning each year. Of these, about eight per annum, or 2 per cent. only, have been fitted with lightning conductors; the remaining 98 per cent. have not been so provided. Where damage has occurred to so-called protected buildings it has generally been found to be due either to an insufficient number of conductors having been provided for the size of the building, or to their having been applied incorrectly; or, after being once fixed, to no further attention having been given to them to ascertain that their connexions to earth have been maintained intact. But with very few exceptions little destruction by fire has occurred to the 2 per cent. of buildings protected by lightning conductors, and, so far as can be ascertained, no case of loss of human life has occurred in a protected building during the last ten years, but there are numerous instances on record of loss of life in unprotected ones.

Except where lightning has been seen to strike a conductor without harmful effects, the only indication of a conductor having received a lightning flash is a small mark on the point, which is not easily visible. Two cases have, however, been noticed during the last year in connexion with the Board's institutions, viz., the Northern Hospital administrative block and Darenth Asylum water-tower, where the points of the conductors have been found to be fused owing to their having received a flash of lightning and conducted it safely to earth without any destructive effect.

I find that in the days of the London School Board there were 500 schools (many of which were loftier than the surrounding buildings) unprotected by conductors and considerable damage occurred. In one instance the school was struck and scholars were killed. This led the School Board to adopt lightning conductors throughout the whole of their system, and to have them periodically tested by an expert and kept in order. Since this precaution has been taken I understand that no damage has occurred whatever. When the School Board was taken over by the London County Council it was decided, owing to the immunity from accident by lightning, to disconnect the lightning conductors, and several were removed from some of the schools, with the result that at one school (Eltringham-street, York-road, Wandsworth), a few days after the lightning conductor had been removed, the building was struck and damaged, and on the advice of the electrical department, which had not been consulted with regard to the dismantling of the conductors, they reverted to protection again.

I find also that the Admiralty, although not protecting their iron ships (owing to these being naturally perfect lightning conductors), provide lightning conductors for chimney-shafts, naval barracks, hospitals, and other buildings. The War Department also applies them to similar buildings, as well as to explosive magazines and factories, the Home Office to prisons, and the Office of Works to all important buildings in its charge. The London County Council, besides the schools already referred to, provide lightning conductors for fire-stations, asylums, and for all tall chimney-shafts under their control.

From a financial point of view it may possibly be cheaper to repair damaged buildings struck by lightning rather than instal an efficient protective system, and in the case of an outbreak of fire during such an occurrence the complete system of fire alarms and appliances for extinguishing fire would probably be effective; but there still remains the possibility of the loss of life, and this is one which, in the case of the asylums where large numbers congregate in the recreation hall, chapel, and such-like buildings, any loss would probably be on a large scale rather than be confined to injury to an individual. I beg, therefore, strongly to recommend that the present system of periodically testing and examining the lightning conductors throughout the Board's institutions once every five years be continued, and that the recommendations as to the fuller protection of the more important buildings receive serious attention from time to time."

MAGAZINES AND REVIEWS.

IN the *Burlington Magazine* Mr. Arthur M. Hind has an article on Jacques Callot, the XVIIth-century artist, whose etchings are so admired by collectors. The illustrations of his work include a chalk study and an etching of "Paris, with the Louvre." Mr. Romney Green, who is so closely identified with the Arts and Crafts movement, continues his series of articles on the "Principles and Evolution of Furniture-Making"; he suggests that the degeneration of the craftsman into the mechanic was largely due, even before the invention of modern machinery, to the evolution of his tools and his methods. Mr. O. M. Dalton writes on the "Byzantine Enamels in Mr. Pierpont Morgan's Collection."

The *Connoisseur* contains various articles of interest to collectors, notably those on the objects of art at Carlyle House, Chelsea, on Sussex pottery, on peasants' rings. The plates include a "Portrait of Federigo Gonzaga, First Duke of Mantua," by Francia, and some illustrations in colours of porcelain knife-handles.

In the *Studio* the series of views of Old Moscow, by A. Vasnetzoff, possess a curious interest as an attempt to render the characteristics of the city in mediæval times. The work of Edmond G. Reuter, of Geneva, is both decorative and imaginative in quality. Recent designs in domestic architecture include "Old Castle, Sussex," by Mr. Ernest Newton, A.R.A.; "Claverdon Hall, Warwickshire," as altered by Mr. Arthur McKewan, and a number of competitive designs for a private laundry.

The most interesting article in the *Architectural Record* is from the pen of Otto Wagner, of Vienna; in it the author deals with numerous practical questions arising out of the development of a great city, and in considering the æsthetic aspects emphatically ranks himself with the advocates of the formal and monumental treatment of buildings. Here and there may be noted a side shot at what Professor Wagner evidently regards as the pernicious doctrines of Camillo Sitte, and he is hardly more in sympathy with the modern German and English schools responsible for the rise of the garden city and garden suburb. The article is accompanied by illustrations of some of Professor Wagner's works. The series of Early American churches is continued in this issue.

The current issue of *Concrete* contains a very clear set of illustrations of the constructional steelwork to Messrs. Nicholl & Co.'s premises in Regent-street, with descriptive notes. The article on a large building in Brunswick-street, S.E., entirely in reinforced concrete, exhibits many points of interest, and the description of the cement-gun and its uses suggests great possibilities for this method in the future, more particularly as regards the coating of steelwork in cement without the use of casings or forms.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday, in the County Hall, Spring-gardens, S.W., Lord Cheylesmore, Chairman, presiding.

LOANS.—The Finance Committee recommended that loans be made to Borough Councils as follows:—Lambeth, 700*l.* for street improvement; Poplar, 10,000*l.* for electricity buildings; Shoreditch, 10,845*l.* for electricity undertaking; and St. Marylebone, 70,000*l.* for erection of a town hall.

LEADENHALL-STREET.—The Improvements Committee recommended that, on the understanding that the Council is not thereby committed to contribute towards the cost of any further widening of Leadenhall-street, a contribution be made, on the Council's usual conditions, of one-half of the net cost of the widening of Leadenhall-street, at Nos. 57 to 69 (inclusive), proposed to be executed by the City Corporation, provided (i.) that if such net cost exceed 252,800*l.*, the Council's contribution shall be limited to 126,400*l.*, and (ii.) that in the execution of the improvement no departure whatever be made from the approved plan except with the previous sanction of the Council.

FIRE STATIONS.—Various repairs and alterations are to be carried out at the chief station at an estimated cost of 135*l.* 8s. 6d., and external painting, cleaning, and varnishing works at the fire stations of the Council, for which tenders are to be invited.

THEATRES, ETC.—The following drawings have been approved by the Theatres and Music Halls Committee:—Amherst Hall, Kingsland High-street—alterations; Ladbroke Hall, Notting-hill—alterations; Marlborough Theatre—bioscope-chamber, lobby, and rewinding room; Windsor Castle Hall, Maxey-road, Plumstead—alterations.

ALHAMBRA.—The Committee also report that drawings have been submitted by Mr. Bertie Crewe, showing proposed alterations at the Alhambra Palace of Varieties, Leicester-square. The alterations include the erection of a cinematograph-chamber at the balcony level, abolition of the pit, and rearrangement of the stalls seating, provision of a new exit, and closing up of certain exits at this level.

LEGAL COLUMN.

London Building Act.

The building line in the Euston-road has been the subject of considerable litigation, and in Rex *v.* Tribunal of Appeal a point came to the Divisional Court for decision. The Superintending Architect had fixed the building line between Hampstead-road and Osnaburgh-street, and five parties appealed to the Tribunal of Appeal. The Tribunal, having heard the parties, varied the building line as determined by the architect in some particulars. The five parties were dissatisfied with the finding, and applied for special cases to be stated. The Tribunal, having given notice to certain parties also interested, determined to state three special cases as between various parties. The London County Council applied to the Court for a rule *nisi* on the ground that under sect. 182 of the London Building Act there was only power for the Tribunal to

state one special case. The Divisional Court held that under the section the Tribunal had a discretion to state such a number of cases as they should deem advisable.

The Right to Light.

The case of Griffith *v.* Richard Clay & Sons, Ltd., briefly noted by us, February 23 last, and reported in our columns last week, on the hearing in the Court of Appeal, appears to raise a new question in connexion with the damages recoverable for an actionable interference with the right to light.

The plaintiff was the owner of two houses in Brunswick-street, Blackfriars, and it was admitted that the defendants, by erecting their new buildings, had obscured the light to certain windows in these two houses. Behind these houses there was another building, also in the ownership of the plaintiff, but separately rated and having no windows looking towards the defendants' buildings. The total surface area of the two houses was 1,000 sq. ft., the surface area of the third house was 1,050 sq. ft. The defendants admitted obscuration to the windows of the two houses, and had paid 150*l.* into Court. The Judge in the Court below found that this would have been sufficient damages if the two houses alone had to be regarded, but the plaintiff contended that as the buildings, which were dilapidated, could be pulled down and one large building be erected upon the whole site, the damage to the site as a whole should be regarded, and the Court accepted this view, and assessed the damages at 200*l.* On the appeal it was contended that the damage to the dominant tenement could only be considered; but the Court of Appeal, without calling upon the respondents' Counsel to argue the case, decided in the respondents' favour that the damage to the whole site must be regarded. The point involved seems not to have been dealt with in the text-books, and raises considerations of considerable difficulty. It is clear that the only claim to light could be based on the light coming through the windows of the two houses facing the defendants' premises. Without a window there can be no easement. It would also be limited to light so enjoyed: "The purpose for which a person may desire to use a particular room or building in future does not either enlarge or diminish the easement which he has acquired" (per Lord Lindley in Colls *v.* Home and Colonial Stores). In Colls' case it was also held that such a diminution of light must be proved as to amount to a nuisance. The difficulty in the case under consideration would, therefore, seem to be a difficulty in proving nuisance in the case of a building which, at the time the action was brought, enjoyed no light from windows looking towards the servient tenement. The light enjoyed through existing windows of these old and low buildings would seem to be likely to make little difference to a large building to be erected on a site more than double the size of that the houses were built upon, yet, as we have shown above, the new building could claim no more light than the old buildings. Therefore the damage to the whole site as distinguished from the old houses would seem to be both remote and very slight. In the Court of Appeal the Lords Justices had regard to the fact that although in this case the time had elapsed within which an injunction could be applied for, the buildings complained of having been completed; yet had proceedings been taken in time and an injunction granted, that injunction would have protected the whole site. That may be so, for if a right is infringed, and the infringement can be restrained by injunction, the Courts cannot be careful to inquire whether or not incidental advantages may accrue from the injunction; but it is otherwise in the case of damages, where exact proof is required as to the injury sustained.

Possibly the present decision may be explained when it is considered that the Judge of the Court below had assessed the damages, an assessment which the Court of Appeal will rarely upset if it is shown that any claim to damages can be supported in law; but it must be confessed that it seems to import a new principle, and it is likely that more will be heard of this point in future cases.

LAW REPORTS.

COURT OF APPEAL.

(Before Lords Justices VAUGHAN WILLIAMS, FLETCHER MOULTON, and FARWELL.)

Case under the London Building Act: Minturn *v.* Barry.

THIS case was heard last week upon the appeal of the plaintiff from a judgment of a Divisional Court of King's Bench, consisting of Justices Bankes and Lush.

In this case the plaintiff, Miss Minturn, was the freeholder of a house known as 14, Chelsea-embankment, which she had acquired some years ago. About the time that she had acquired the house she discovered that a wall at the rear of her house was very damp, and her endeavours to remedy that failing, and finding that the dampness caused injury to the health of her servants, she then served a party-wall notice upon the defendant, Sir John Wolfe-Barry, the adjoining owner, under sect. 88 of the London Building Act, the notice expressing the wish to excavate on the defendant's side to try and remedy the defect by putting in some impervious material. It was alleged that the wet came in on the defendant's side. The case then went in the ordinary course under the Act to two surveyors, and the two referred it to a third, and from the decision of the third surveyor the plaintiff appealed to the County Court Judge sitting at Brompton, there being a right of appeal under the London Building Act. In the County Court the defendant took the objection that the wall could not be held to be defective merely because of damp, and the County Court Judge so decided. From that decision the plaintiff appealed to the Divisional Court, where it was held that a party wall could be defective because of damp within the meaning of the London Building Act, and the case was remitted to the County Court for retrial. The County Court Judge retried the case upon the facts, and, following some remarks made by the Judges in the Divisional Court upon the question whether the plaintiff ought to be allowed to execute work upon the adjoining owner's side, the County Court Judge held that the previous history of the wall might be gone into. He then went into the history of the wall, when he found that originally the plaintiff's party wall was erected upon the top or embodied part of the old garden wall. He said that if a building owner chose to make use of a wall such as a garden wall, which must have been quite sufficient for the purposes of a garden wall, he could not complain and say afterwards it was damp and defective, and that he could go on the building owner's side and remedy that defect. His Honour then made an order by which the plaintiff was precluded from going on the defendant's side of the wall and doing something which the plaintiff alleged it was impossible for her to do on her side. From this decision the plaintiff appealed to the Divisional Court, composed of Justices Bankes and Lush, and, her appeal being dismissed, the plaintiff now appealed.

At the conclusion of the arguments Lord Justice Vaughan Williams, in giving judgment, said the sole question for the Court to decide was whether in the circumstances there ought to be a new trial. He was of opinion, and the Court was of opinion, that the County Court Judge took into consideration matters which he ought not to have taken into consideration in arriving at his judgment. It was clear that the County Court Judge did take into consideration matters of ancient history with regard to the wall in question. As there was to be a new trial he did not propose to deal with the evidence or the facts of the case in any way, because it might prejudice the new trial.

Lord Justice Moulton concurred. He thought that the greater part of the discussion in that Court had been upon points which did not affect their judgment. The London Building Act contained provisions which enabled party structures to be repaired and made good by the person owning the house and premises, of which the party structure formed part. The conditions under which those rights were to be exercised depended upon the condition of the party wall and the arrangement of the premises on the side. But the provisions of the Act had no relation to any question as to behaviour in the past, but their object was for the purpose of giving a remedy for a present evil. The language of the Act made it quite clear that the Tribunal, which had to decide these matters between the building owner and the adjoining owner, was composed of surveyors, and if there was a difference of opinion by the County Court Judge. He was of opinion that the surveyors and the County Court Judge, upon such a matter, had no right to inquire in any way how the wall in question got into the condition in which it was and as to whose fault it was previously. What the Tribunal had to decide was the way in which the work could be carried out so as to cause as little inconvenience as possible. Beyond that they had no business to inquire into anything. His Lordship was clearly of opinion that the learned County Court Judge had thought that the questions which arose under the sections of the Act were affected by the past history of the wall; by the fact that the wall had been a garden wall and had been adopted as a party wall. It was clear, according to his view, that the County Court Judge thought that the wall had formerly water in it, and that if the plaintiff wanted to do anything to prevent the water coming into it she must do it on her own side. The County Court Judge had no business to go into the past history of the wall. He thought that in the circumstances there must be a new trial.

Lord Justice Farwell delivered judgment to the same effect, and the appeal was accordingly allowed, the costs of the appeal to the Divisional Court and to the Court of Appeal being awarded to the plaintiff, and the costs of the previous trials in the County Court being ordered to abide the result of the third trial.

Sir A. Cripps, K.C., Mr. Hudson, K.C., and Mr. Cecil Walsh appeared for the appellant; and Mr. J. R. Atkin, K.C., and Mr. Bliss for the respondent.

Case under the London Building Act: Work to a Shop Roof.

A DECISION under the London Building Act, 1894, was given at the Greenwich Police-court on the 9th inst. by Mr. Symmons on a case brought before him by the District Surveyor for Deptford, Mr. B. Greig. The facts were that Mr. F. C. Robertson, builder, of Goodwood-road, Deptford, had stripped off the zinc external covering of the roof of a projecting shop at No. 120, High-street, Deptford, and in place thereof had covered the roof with tarred felt. The whole of the projecting shop roof had been so treated with the exception of a portion occupied by a skylight. No notice of the work had been served on the District Surveyor, and the defendant contended that notice was not necessary, as the work was intended to be temporary. At the date of the hearing the work had been completed some five weeks. The District Surveyor relied on the provisions of sect. 145 of the London Building Act, 1894, which requires that where a building or structure or work is about to be commenced, notice shall be served, and contended that as the work done involved the rules of the Act with regard to roof coverings, the duty was imposed on him of securing compliance with such rules. He argued that the defence as to the work being temporay was not material to the case.

The magistrate decided that notice of the work should have been served, and fined defendant 1s. and 12s. costs.

The above decision is especially interesting in view of the case mentioned in the *Builder* of April 5 and 12 last (see pages 409 and 435).

FOREIGN AND COLONIAL.

Prisons, Bulgaria.

The *Zentral Anzeiger für das öffentliche Lieferungswesen* (Vienna) of April 25 states that the Bulgarian legislative authorities recently voted a sum of 2,600,000 francs (104,000*l.*) for the purpose of erecting prisons at Rustchuk, Varna, Plevna, Stara Zagora, Vratza, and Küstendil. The erection of those buildings will be begun next year, and it is expected that they will be completed in 1917.

The Building Trade in Amsterdam.

Mr. W. A. Churchill, British Consul at Amsterdam, reports great activity in the building trade during 1911, and the probability of this activity continuing during the next two or three years. There has, in fact, the Consul continues, never been so much building in Amsterdam at one time. A new Stock Exchange, large shops, offices, and residential buildings are in course of erection, and there is a project to build a new Royal palace. This activity will produce a demand for considerable quantities of building materials, furniture, sanitary engineering, heating and illuminating appliances, etc.

Building in the Argentine Republic.

The *Boletin Oficial* of April 10 publishes a law (No. 8,681) whereby the executive authorities are authorised to give out to contract the construction of a building for the Ministry of Agriculture and for all the offices belonging to that Department. The sum earmarked for this purpose amounts to 5,000,000 pesos currency (about 437,500*l.*).

Town Hall, Craijova, Roumania.

The *Zentral Anzeiger für das öffentliche Lieferungswesen* (Vienna) of May 2 notifies that the municipal authorities of Craijova have decided to erect a new town hall in that place at a cost of 1,300,000 lei (52,000*l.*).

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xvi.; Auction Sales, xxii. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

Competitions.

MAY 25.—**A.A. Journal.**—DESIGN FOR COVER.—See "Competition News," May 17 (page 574).

MAY 25. — **Lymington.** — PUBLIC OFFICES.—Thirty and fifteen guineas for second and third designs. Assessor, Mr. R. F. Gutteridge, F.R.I.B.A. Particulars from the Town Clerk, Lymington.

JUNE 1.—**Dunfermline.**—INSTITUTE AT NETHERTOWN.—Cost not to exceed 7,000*l.* Premiums of 20*l.*, 15*l.*, and 10*l.* Assessor, Mr. E. A. Jamieson. Particulars from the Secretary, Carnegie Trust, Abbot-street, Dunfermline.

JUNE 3.—**Sheffield.**—CRIPPLES' HOME.—Limited to local architects. Mr. E. M. Gibbs, F.R.I.B.A., and Mr. F. E. P. Edwards, F.R.I.B.A., assessors.

JUNE 14. — **Conisbrough.** — ADDITIONS TO HOSPITAL.—The Doncaster and Mexbrough Joint Hospital Board invite competitive plans for additions to Isolation Hospital. See advertisement in issue of May 17 for further particulars.

JUNE 28. — **Hale, Cheshire.**—TOWN PLANNING SCHEME.—Premiums 50*l.* and 25*l.* Particulars from the Council Offices, Hale. See page 601.

* JUNE 28.—**Regent's Quadrant.**—DESIGN FOR TREATMENT.—Premiums, 25 guineas, and 25 guineas divided. Adjudicators, Mr. W. Flockhart, Mr. E. A. Rickards and Mr. Alan E. Munby. See advertisement in this issue for further particulars; also "Competition News," issue of April 19 (page 453), May 3 (page 512), May 10 (page 537), May 17 (page 573), and this issue (page 595).

JUNE 30.—**Padiham.**—TOWN HALL, BATHS, ETC.—Premiums 40*l.* and 20*l.* Particulars from Mr. J. Gregson, A.M.Inst.C.E., Surveyor's Office, Padiham.

JULY 1.—**Dusseldorf.**—A plan for the extension of the City of Dusseldorf. Premiums of 1,000*l.* to 375*l.* Conditions on application to the Chief Burgomaster, Dusseldorf. A translation appeared on page 365, September 29.

JULY 1.—**Llanelly.**—SCHOOL BUILDINGS.—Assessor to be chosen by President of R.I.B.A. Premium 50 guineas. Particulars from the Clerk to the Education Committee, Coleshill-terrace, Llanelly.

JULY 1.—**Port of London.**—NEW OFFICES.—Limited to those mentioned in "Competition News," issue of April 12 (page 424).

AUGUST 6. — **Cardiff.** — FIRE-STATION. — The Cardiff Corporation invite designs and estimates for a fire brigade station in Westgate-street. Mr A. Marshall Mackenzie, assessor. Particulars from the Town Clerk, City Hall, Cardiff.

AUGUST 30. — SAXON SNELL PRIZE. — Fifty guineas; with medal, is offered for essay on a hospital subject. Particulars from the Sanitary Institute, 90, Buckingham Palace-road, S.W.

OCTOBER 1. — **Ottawa.** — MONUMENT TO KING EDWARD VII.—Sketch models in plaster to be sent to the Director of National Art Gallery, Ottawa.

NO DATE.—**Birmingham.**—BATHS.—Twenty and 10 guineas for second and third designs. Applications for conditions to be sent to the Superintendent Engineer, Kent-street, Birmingham.

NO DATE.—**Jordanhill, Glasgow.**—PROPOSED TRAINING COLLEGE.—Limited to six firms, named in "Competition News," December 1, page 635.

NO DATE. — **Warrington.** — SCHOOL. — The Warrington Education Committee invite competitive plans for the erection of a public elementary school. See advertisement in issue of February 16 for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

MAY 24. — **Pontypool.** — HOUSES.—Erection of twenty-eight houses on the Blaendare-road, Pontypool, and twenty houses on the Sunny Bank-road, Griffithstown. Plans and specifications with Mr. Thos. M. Wintle, Bethany, Park View, Pontypool.

MAY 24.—**Rhondda.**—IMPROVEMENTS, ETC.—For street improvements at Howard-terrace, Clydach Vale; the erection of a stable at the rear of the Bridgend Hotel, Ystrad. Plans and specification seen, and forms of tender, on deposit of 1*l.* 1s., from Mr. W. J. Jones, Engineer and Surveyor, Council Offices, Pentre, Rhondda.

MAY 25.—**Swansea.**—EXTENSION.—For the extension of Christ Church, Swansea. Mr. E. M. Bruce Vaughan, F.R.I.B.A., architect, 21, Dumfries-place, Cardiff.

MAY 25. — **Wrexham.** — HOUSE.—Erection of a house and outbuildings in Maes-y-dre-road, Wrexham. Plans and specification seen, and quantities, on deposit of 1*l.* 1s., from Mr. J. H. Swainson, A.M.Inst.C.E., architect and surveyor, 42, Regent-street, Wrexham.

MAY 27.—**Ardglass.**—HALL.—For erection of a parochial hall at Ardglass. Plans and specifications from Messrs. Browne Brothers, architects, Ardglass, Co. Down.

MAY 29. — **Auchterless.**—ROOM.—New manual instruction room at Badenscoth School, Auchterless. Plans and specifications with Mr. W. L. Duncan, architect, Turriff.

MAY 29.—**Buckhurst Hill.**—ROOM, ETC.—Erection of a manual instruction and cookery room on land adjoining the boys' Council school at Chigwell, and for a manual instruction room at the rear of and adjoining the boys' school, Princes-road, Buckhurst Hill. Plans and specifications with Mr. Herbert J. Goodwin, Clerk to the Committee, Education Office, Loughton.

MAY 29.—**Frome.**—VILLAS.—Erection of a pair of villas at Dommett's-lane, Frome. Plans, specifications, and quantities on deposit of 2*l.* 2s. with Mr. W. Cecil Glass, architect, 9, The Bridge, Frome.

MAY 29.—**Huddersfield.**—HOUSE.—Erection of a house, Barton-road, Crosland Moor. Plans seen, and quantities from Mr. P. A. Hinchliffe, A.R.I.B.A., architect, surveyor, and valuer, 14, Regent-street, Barnsley.

MAY 29.—**Liversedge.**—HOUSES.—Erection of four houses, Union-road, Liversedge. Plans, etc., seen, and quantities from Mr. William Morton, architect, Central-chambers, Cleckheaton.

MAY 29.—**Pontypool.**—EXTENSION.—For the extension of the headquarters of the 2nd Battalion Monmouthshire Regiment at Pontypool. Plans and specifications seen, and quantities from the architects, Messrs. Jenkins, James, & Co., 28, High-street, Newbridge, Mon. Deposit of 1*l.* 1s.

MAY 30. — **Pontypridd.**—HOUSES.—Erection of eight houses at Coedpenmaen, Pontypridd, for the Rhondda Valley Breweries Company, Ltd. Deposit of 2*l.* 2s. for quantities to Mr. T. F. T. Jarvis, F.C.I.S., Pontypridd

MAY 30.—**Scunthorpe.**—CONVENIENCE.—For extension of the public convenience on Market-hill. Plan and specification at the Surveyor's Office, High-street, Scunthorpe.

MAY 30.—**Turriff.**—ADDITIONS, ETC.—For dwelling-house, Ladybog Croft, Auchterless; additions to steading, Lambslack, Auchterless; additions to steading, Lower Oldmill, Turriff. Plans and specifications with Mr. W. L. Duncan, architect, Turriff.

MAY 31. — **Blackwood.** — HOUSES.—Erection of sixteen houses at Blackwood for the Gordon-road Building Club. Plans and specifications with Mr. Ralph Simmonds, architect, Royal-chambers, Blackwood.

MAY 31. — **Bridgend.** — ADDITIONS, ETC.—For alterations and additions to the schoolroom of the English Congregational Church. Plan and specification with Mr. P J. Thomas, architect, Bridgend.

MAY 31.—**Huddersfield.**—WARDS.—Erection of receiving and short-period lunatic wards at the Union Workhouse, Crosland Moor, Huddersfield. Drawings and quantities with Messrs. John Kirk & Sons, architects, Central-buildings, Market-place, Huddersfield.

MAY 31.—**Pontypool.**—OFFICES.—For the erection of new offices for the North Monmouthshire Conservative Association, and club premises for Junior Conservatives, at Osborne-road, Pontypool, Mon. Plans and specifications with Mr. A. Gordon Babbidge, architect and surveyor, Clarence-chambers, Pontypool, Mon.

MAY 31.—**Turriff.**—ROOM.—New manual instruction room at Turriff Public School. Plans and specifications with Mr. W. L. Duncan, architect, Turriff.

JUNE 1. — **Ballaghadereen.**—SACRISTIES.—For erecting new sacristies at Ballaghadereen Cathedral. Plans and specification with Messrs. William H. Byrne & Son, architects, 20, Suffolk-street, Dublin. Quantities by Messrs. Morris & Co., 68, Harcourt-street, Dublin.

JUNE 1. — **Derincarthe.** — ALTERATION.—For alteration to Derincarthe Church, near Ballaghadereen. Plans and specification with Messrs. William H. Byrne & Son, architects, 20, Suffolk-street, Dublin

JUNE 3. — **Burnley.**—ALTERATIONS.—For alterations to Abel-street Council School. Specifications, etc., from the Borough Engineer, Town Hall, Burnley.

JUNE 3.—**Cork.**—SCHOOLS.—For erection of new schools off the Dyke-parade. Plans and specifications seen, and quantities, on 1*l.* deposit, from the architect, Mr. F. Hynes, F.R.I.B.A., 5, South-mall, Cork.

JUNE 3. — **Huddersfield.** — BANK.—Erection of new banking premises for the West Yorkshire Bank, Ltd., in Westgate, Huddersfield. Messrs. J. C. Gibson, Skipwith, & Gordon, architects, 5, Old Bond-street, London. Deposit of 5*l.*

* JUNE 3. — **Southend-on-Sea.**—NEW BLOCK.—The Southend-on-Sea Corporation invite tenders for construction of new administrative block at the Sanatorium. See advertisement in this issue for further particulars

JUNE 3.—**West Bromwich.**—ALTERATIONS, ETC.—For alterations, painting, etc., at the Hall, Great Barr Park. Specifications and conditions of contract seen, and forms of tender from Mr. A. H. Ward, Clerk to Guardians, 22, Lombard-street, West Bromwich.

* JUNE 4.—**Canning Town, E.**—EXTENSIONS.—The West Ham B.C. invite tenders for (1) building of extension to electricity generating-station, Quadrant-street, and (2) coal bunkers (steelwork) in connexion therewith. See advertisement in this issue for further particulars.

JUNE 4.—**Scarborough.**—WARD.—Construction of a phthisis ward at the Workhouse, Dean-road, Scarborough. Plans and specifications with architect, Mr. J. A. Iveson, 16, Dean-road, Scarborough.

JUNE 5. — **Aberaman.** — ADDITIONS. — The Aberaman Workmen's Hall and Institute Committee invite tenders for proposed alterations and additions to their premises. Plans, specifications, and quantities with architect, Mr. R. H. Willson, 41, Lewis-street, Aberaman.

JUNE 5. — **Cheltenham.**—WARDS.—Erection of children's sick and isolation wards at the Workhouse, Cheltenham. Plans and specifications by Mr. Thomas Malvern, architect, 21, Winchcomb-street, Cheltenham.

JUNE 5. — **Maidstone.**—ROOM, ETC.—For erection of Board-room and offices in King-street. Plans and specifications seen, and quantities and forms of tender from Messrs. Ruck & Smith, architects, 86, Week-street, Maidstone, on deposit of 1*l.* 1s.

JUNE 5.—**Woolwich.**—CONVENIENCE.—Construction of an underground sanitary convenience for women in Beresford-square, Woolwich. Drawing, specification, and form of tender with Mr. J. Rush Dixon, M.Inst.C.E., Borough Engineer, Town Hall, Woolwich. Deposit of 1*l.* 1s.

* JUNE 6. — **Brixton, S.W.** — EXTENSION OF POST-OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for extension of Brixton Sorting-office. See advertisement in this issue for further particulars.

JUNE 6.—**Southend.**—PIER.—Construction of a new loading pier Drawings, specifications, forms of tender, and quantities with Mr. Ernest J. Elford, M.Inst.C.E., Borough Engineer, Clarence-street, Southend-on-Sea, on deposit of 2*l.* 2s.

JUNE 8. — **Altrincham.**—COTTAGES.—For erection of thirty-two cottages on the Council's estate, Moss-lane, Altrincham. Specifications and quantities from the architect, Mr. E. W. Hilton, Mossburn-buildings, Stamford New-road, Altrincham, on deposit of 1*l.* 1s

JUNE 10. — **Altrincham.** — SHELTER, ETC.—For erection of a shelter and conveniences in the Broadheath Recreation Ground. Plans seen, and quantities and forms of tender from Mr. H. E. Brown, Surveyor, Town Hall, Altrincham.

* JUNE 10. — **Brighton.** — NEW FLOOR.—The Brighton B.C. invite tenders for construction and laying of new floor to music room at Royal Pavilion. See advertisement in this issue for further particulars.

JUNE 10.—**Carlisle.**—ADDITIONS.—For additions and alterations at the St. Cuthbert's R.C. Schools, Union-street, Carlisle. Plans and specifications with Mr. H. Foxall, Lic.R.I.B.A., architect, 54, Lowther-street, Carlisle.

JUNE 10. — **Evesham.**—COTTAGES.—Erection of cottages at Broadway. Plans and specifications seen, and quantities and form of tender from the architects, Messrs. Dicks & Waldron, 1, Market-place, Evesham, on deposit of 1*l.* 1s.

JUNE 11. — **Birmingham.** — EXTENSION.—The Great Western Railway invite tenders for extending the superstructure of Park-street Bridge, and for platform and roofing work at Moor-street Station, Birmingham. Plans and specification seen, and forms of tender and quantities at the office of the New Works Engineer at Paddington Station, London.

JUNE 11. — **Crumlin.**—BUILDINGS.—Erection of station buildings at Hafodyrynys, near Crumlin, for the Great Western Railway. Apply, Company's Offices, Paddington Station, London.

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

JUNE 11.—**Southall.**—BATH.—Construction of an open-air swimming-bath at the Recreation Ground, Southall Green. Plans and specification seen, and quantities and forms of tender, on deposit of 1*l.* 1s., from Mr. Reginald Brown, A.M.Inst.C.E., F.S.I., etc., Engineer to the Council, Town Hall, Southall.

JUNE 12.—**Preston.**—ADDITIONS, ETC.—Alterations and additions to the Orrell Far Moor and Orrell Holgate Council Schools. Plans seen, and quantities from the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston. Deposit of 2*l.*

✱ JUNE 15.—**Winchmore Hill, N.**—ADDITIONS, ETC.—The Metropolitan Asylums Board invite tenders for alterations and additions to Medical Superintendent's House at Northern Convalescent Fever Hospital. See advertisement in this issue for further particulars.

JUNE 17.—**Parkfield.**—SCHOOL.—Erection of a new Council school at Parkfield. Plans, etc., with the architects, Messrs. Ewen Harper & Bro., Ruskin-chambers, Corporation-street, Birmingham. Quantities on deposit of 1*l.* 1s.

✱ JUNE 17. — **West Ham, E.** — HANDICRAFT CENTRE.—The West Ham Education Committee invite tenders for erection of handicraft centre, Upton-lane School. See advertisement in this issue for further particulars.

✱ JUNE 18.—**Birmingham.**—PARCEL OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for the erection of Birmingham new Parcel Office. See advertisement in this issue for further particulars.

NO DATE.—**Belfast.**—SCHOOLS.—For building new National schools of "The Holy Family," Newington, Antrim-road. Quantities from Mr. S. W. Hunter, Surveyor, Scottish Provident-buildings. Plans and specifications with Messrs. E. & J. Byrne, architects, 4, Waring-street.

NO DATE.—**Brierfield.**—SHOPS, ETC.—Erection of new picturedrome, billiard hall, and shops in Burnley-road, Brierfield. Quantities from Mr. J. P. Earnshaw, Q.S.A., architect and surveyor, 56, Railway-street, Nelson.

NO DATE.—**Cardiff.**—WAREHOUSE.—Erection of a new warehouse at No. 16, Millicent-street, Cardiff. Quantities, on deposit of 2*l.* 2s., from Messrs. Ivor Jones & Percy Thomas, architects, 18, St. Mary-street, Cardiff.

NO DATE.—**Darlington.**—HOUSES.—Erection of a pair of semi-detached houses for the Darlington Garden Suburb Company, Ltd. Quantities from Mr. G. Walesby Davis, M.S.A., Lic.R.I.B.A., High-row-chambers, Darlington.

NO DATE.—**Lisbuoy.**—SCHOOL.—Erection of new school at Lisbuoy, Carland, Tyrone. Plans and specifications with Messrs. Byrne, architects, 4, Waring-street, Belfast.

NO DATE.—**London.**—ADDITIONS, ETC.—For alterations and additions to St. Matthew's Vicarage, 27, St. Petersburgh-place, Bayswater, W. Plans and quantities from Messrs. Gleed & Belcher, quantity surveyors, 8 and 9, Martin's-lane, Cannon-street, E.C., on deposit of 2*l.* 2s.

NO DATE.—**Morpeth.**—ADDITIONS, ETC.—For additions to stores buildings and the enlargement of Engineer's cottage. Names and addresses to Mr. J. A. Bean, County Architect, Moothall, Newcastle-on-Tyne.

NO DATE.—**Neville's Cross.**—LAUNDRY.—For erection of laundry at Neville's Cross, Durham, for the Co-operative Laundries, Ltd. Architect, Mr. L. G. Ekins, Co-operative Wholesale Society, West Blandford-street, Newcastle-upon-Tyne.

NO DATE.—**Pontefract.**—HOTEL, ETC.—Erection of the Crosskeys Hotel, stables, boundary walls, etc., in Pontefract, for Messrs. Beverley Brothers, Ltd., Eagle Brewery, Wakefield. Messrs. Garside & Pennington, architects and surveyors, Ropergate, Pontefract, and Wesley-street, Castleford.

NO DATE.—**Pontefract.**—VILLAS.—Erection of two pairs semi-detached villas in Ackworth-road Pontefract. Quantities from Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford.

NO DATE.—**Swansea.**—EXTENSION.—For extension of Christ Church. Mr. E. M. B. Vaughan, F.R.I.B.A., architect, 21, Dumfries-place, Cardiff.

NO DATE.—**Wakefield.**—HOUSES.—Erection of fourteen dwelling-houses in Club-terrace, and thirteen six-roomed houses, with bath, etc., in Railway-view, Fitzwilliam, near Wakefield, for the South Kirkby, Featherstone, and Helmsworth Collieries, Ltd. Messrs Garside & Pennington, architects and surveyors, Pontefract and Castleford.

✱ NO DATE.—**Ware, Herts.**—BOILER-HOUSE.—The Guardians of the Ware Union invite tenders for boiler-house and other alterations at the Workhouse. See advertisement in this issue for further particulars.

ENGINEERING, IRON, AND STEEL.

MAY 29.—**Coggeshall.**—BRIDGE.—For widening the bridge over the River Blackwater at Coggeshall. Drawings and specification with Mr. Percy J. Sheldon, M.Inst.C.E., County Surveyor, County Surveyor's Office, Chelmsford.

MAY 29.—**Glasgow.**—CRANES.—For erection of overhead travelling cranes in the sub-stations. Plans seen, and specifications and form of tender from Mr. W. W. Lackie, electrical engineer, 75, Waterloo-street.

MAY 31.—**Bournemouth.**—HEATING, ETC.—For heating, etc., new law courts. Particulars and forms of tender from the Engineer, Mr. F. W. Lacey, Municipal Offices, Bournemouth. Deposit of 1*l.* 1s.

MAY 31.—**Leek.**—WASHER.—For erection at the gasworks of a rotary scrubber-washer. Specification, form of tender, and particulars from Mr. S. T. Smith, engineer and manager, Gasworks, Leek.

MAY 31.—**Pytchley.**—ENGINE, ETC.—For fixing an oil engine and pump and erection of an engine-house, at the Pytchley Waterworks. Drawings seen, and specifications and forms of tender from Mr. S. Wallis, Sanitary Surveyor, Market-street, Kettering.

JUNE 3. — **Ammanford.** — BRIDGE.—For the demolition of the existing bridge and the erection of a new masonry bridge, together with constructing embankment, approaches, and fencing, of Ferrws Bridge. Plans and specifications seen, and quantities and form of tender, on deposit of 2*l.* 2s., from Mr. R. Williams Jones, County Surveyor, County Offices, Carmarthen.

JUNE 3.—**Manchester.**—PLANT.—For erection, at Stuart-street generating-station, of an electrically-driven coal-conveying plant. Specifications and forms of tender from Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester. Deposit of 1*l.* 1s.

JUNE 7.—**Margate.**—PLANT.—Installation of a laundry plant in the building adjoining the Dane pumping-station, Margate. Plans seen, and specification and particulars from Mr. E. A. Borg, Borough Surveyor, Margate. Deposit of 5*l.*

JUNE 10. — **Hanwell.** — DESTRUCTOR.—For the construction of a refuse destructor. Particulars from the Surveyor, Mr. S. W. Barnes, A.M.Inst.C.E., Council Offices, Cherington-road, Hanwell, W.

JUNE 17. — **Shoeburyness.** — TANK, ETC.—For erection of a cast-iron tank 30 ft. by 14 ft. by 6 ft. deep; erection of an 80-b.h.p. gas-engine (Hornsby Stockport preferred), line shafting, etc.; and erection of a set of three-throw pumps. Specification and particulars from the Engineer at the Waterworks, Shoeburyness.

✱ JUNE 17.—**West Ham, E.**—ELECTRIC LIGHT AND HEATING.—The West Ham Education Committee invite tenders for installing electric light and hot-water heating apparatus at Colegrove-road Schools, Stratford, and extension of offices, 95, The Grove, Stratford, E. See advertisement in this issue for further particulars.

NO DATE.—**Dunholme.**—BRIDGE.—For erecting a bridge over the beck at Dunholme. Names and addresses to Messrs. Thropp & Harding, surveyors, 29, Broadgate, Lincoln.

FURNITURE, PAINTING, MATERIALS, etc.

MAY 25. — **Bodmin.**—PAINTING.—For outside and inside painters' work on various wards and offices, steel stack, fire-escapes, railings, etc., of the Cornwall County Asylum. Forms of tender from Mr. A. F. Hughes, Clerk of Asylum, Bodmin.

MAY 25.—**Hertford.**—PAINTING.—For distempering, painting, etc., the dining hall and various wards at the Hertford Union Workhouse. Particulars and specification at the Workhouse.

MAY 25. — **Leeds.** — CLEANING, ETC. — For the cleaning and redecorating of St. Stephen's Church, Burmantofts, Leeds. Specifications and particulars from Mr. F. Holms, 27, Butta-court, Guildford-street, Leeds.

MAY 25.—**Spital.**—PAINTING.—For painting the Infectious Diseases Hospital and caretaker's quarters. Specifications and forms of tender from the Borough Surveyor, Salter-gate, Chesterfield.

MAY 25. — **Wigan.**—PAINTING.—For the cleaning, painting, etc., of the pavilion and band-stand in the Mesnes Park. Specification seen, and particulars from the Borough Engineer, King-street West.

MAY 28.—**Brentford.**—BOARDS.—For the supply of 48 fathoms of yellow Baltic board ends. Mr. William Stephens, Clerk to the Guardians, Union Offices, Isleworth, W.

MAY 28.—**Chesterfield.**—PAINTING.—For painting the exterior wood and iron work of the two lodges, the greenhouses, the seats of the enclosure and the pavilion in the Queen's Park. Specification and forms of tender from the Borough Surveyor, Salter-gate.

MAY 28.—**Shrewsbury.**—WALL, ETC.—For re building wall, laying concrete paving, supplying and erecting unclimbable iron fencing, and other work adjoining north side of river and below Welsh Bridge. Specification and drawings seen, and quantities and form of tender, on deposit of 1*l.* 1s., from Mr. W. Chapple Eddowes, Borough Surveyor, Borough Surveyor's Office, The Square, Shrewsbury.

MAY 30.—**Sutton.**—PAINTING.—For the painting of the foreman's house at the Council's Farm, Clensham-lane, Sutton. Specification and form of tender from the Surveyor to the Council, Mr. Wm. Hedley Grieves, Municipal Offices, Sutton, Surrey.

MAY 30.—**Uxbridge.**—PAINTING, ETC.—For interior decoration and other work in new scarlet-fever and observation blocks at Hospital, Kingston-lane, Hillingdon, near Uxbridge. Specification with the Surveyor, Mr. William L. Eves, 54, High-street Uxbridge.

JUNE 4.—**Keighley.**—PAINTING.—For repainting the exterior wood and iron work at the Infectious Diseases Hospital and the Consumption Sanatorium, Morton Banks, near Keighley. Quantities and form of tender from the architects, Messrs Moore & Crabtree, York-chambers, Keighley.

✱ JUNE 4. — **London, E.C.** — DEMOLITION.—Messrs. Horne & Co. invite tenders for demolition and clearing away of the whole of the building and rubbish of the G.P.O. East. See advertisement in this issue for further particulars.

JUNE 5.—**Carshalton.**—PAINTING.—For painting works at the Council offices and fire-station; at the sewage works; direction posts, name-plates, railings, etc., throughout the district. Specification and form of tender from the Council's Surveyor, Mr. W. Willis Gale, A.M.Inst.C.E., District Council Offices, The Square, Carshalton.

✱ JUNE 5.—**Sutton (Surrey).**—CLEANING AND PAINTING.—The Metropolitan Asylums Board invite tenders for cleaning and painting works at Down's School, Sutton, Surrey. See advertisement in this issue for further particulars.

JUNE 7.—**Carmarthen.**—PAINTING.—For painting and colouring at the schools, for the County Council. Specifications seen, and particulars from Mr. W. Vincent Morgan, A.R.I.B.A., County Architect, County Education Offices, Carmarthen.

JUNE 8.—**Aberdare.**—RESLATING.—For reslating the roof of the police-station at Aberaman, near Aberdare. Plans seen, and specification at the Police-station, Aberdare, and with Mr. T. Mansel Franklen, Clerk of the County Council, Glamorgan C.C. Offices, Cardiff.

JUNE 10. — **Glasgow.** — PAINTING.—The Caledonian Railway Company invite tenders for the painter work of the bridge over River Clyde, Glasgow, and adjoining bridges. Specification and schedule at the office of the Company's Engineer, Buchanan-street Station, Glasgow. Deposit of 2*l.* 2s.

JUNE 10. — **Huddersfield.**—PAINTING.—For the internal painting and decorating of the administrative block of the Sanatorium, Mill-hill, Dalton. Specifications, conditions, quantities, and forms of tender from Mr. K. F. Campbell, M.Inst.C.E., Borough Engineer and Surveyor, 1, Peel-street.

JUNE 10.—**Huddersfield.**—PAINTING, ETC.—For the painting, colouring, etc., of various schools in the borough. Specifications, conditions, and forms of tender with the Borough Engineer and Surveyor, 1, Peel-street.

JUNE 11.—**Hastings.**—PAINTING.—For the outside painting of the pumping station, and inside painting of four cottages, at Brede. Specification and form of tender from the Borough Engineer, Mr. P. H. Palmer, M.Inst.C.E., Town Hall, Hastings.

✱ JUNE 17.—**West Ham, E.**—PAINTING, ETC.—The West Hom Education Committee invite tenders for cleansing, repairing, and painting of various schools during the summer vacation. See advertisement in this issue for further particulars.

ROADS, SANITARY AND WATER WORKS.

MAY 27. — **Bridgwater.** — PIPES.—For about 210 tons of 3-in. cast-iron pipes and other castings. Engineer, Mr. W. Alexr. Collins, 56A, Eastover, Bridgwater. Deposit of 2*l.* 2s.

MAY 28.—**Belfast.**—STREETS.—For the sewering, paving, etc., of the new streets. Specification and form of tender from the City Surveyor. Deposit of 1*l.* 1s.

MAY 28.—**Pontefract.**—MATERIALS.—For supply of 800 tons of broken granite, 800 tons unbroken whinstone, and 500 tons of broken dross or limestone. Specifications and form of tender from Mr. J. E. Pickard, Borough Engineer and Surveyor, Municipal Offices, Pontefract.

MAY 29.—**Bishop Auckland.**—ROAD.—For the making of road at the rear of Latherbrush-cottages. Plans and specifications seen, and particulars from Mr. Collins, Surveyor, Town Hall-buildings.

MAY 29.—**Bollington.**—PAVING.—For paving on concrete foundation with granite setts the carriageway in Wellington-road. Particulars from Mr. S. Knight, Clerk, Council Offices, Bollington, near Macclesfield.

MAY 29. — **Tottington.** — PAVING.—For the paving of Bank-street. Specification and form of tender from Mr. L. Kenyon, Surveyor, Council Offices, Tottington, Lancs.

MAY 30.—**Widnes.**—SETTS.—For the supply of cube granite setts or Syenite cube setts. Forms of tender and specification from Mr. John S. Sinclair, A.M.Inst.C.E., Borough Surveyor, Town Hall, on deposit of 1*l.* 1s.

JUNE 1.—**Winterton.**—GRANITE.—For a supply of 450 tons of granite. Mr. Norman Gibson, Clerk, South-street, Winterton, Doncaster.

JUNE 3.—**Hastings.**—GRANITE.—For supply of 2,000 tons of broken granite. Specification and form of tender from the Borough Engineer, Mr. P. H. Palmer, M.Inst.C.E., Town Hall, Hastings.

JUNE 3.—**Romford.**—GRANITE.—For the supply of blue Guernsey granite. Specification and form of tender from Mr. George Lapwood, Highway Surveyor, Victoria-chambers, Romford.

✱ JUNE 5. — **Woolwich, S.E.** — GRANOLITHIC PAVING.—The Metropolitan Asylms Board invite tenders for granolithic paving at Brook Ambulance Station, Shooters' Hill-road, Woolwich, S.E. See advertisement in this issue for further particulars.

JUNE 11.—**Colchester.**—ROADS.—For sewering, kerbing, channelling, paving and making good road at Priory-grove. Plans seen, and specifications, quantities, etc., from Mr. H. Goodyear, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Colchester.

✱ JUNE 11.—**London, S.W.**—PAVING WORKS.—The Wandsworth B.C. invite tenders for wood-paving, etc., in Mitcham-lane, Southcroft-road, Wimbledon-road, and Clapham Park-road, and of granite-sett paving, etc., in Long-road, Clapham Common. See advertisement in this issue for further particulars.

JUNE 11.—**Southall.**—EXTENSIONS.—For extensions to the sludge press house at the Sewage Disposal Works. Plans and specifications seen, and quantities and form of tender, on deposit of 1*l.* 1s., from Mr. Reginald Brown, A.M.Inst.C.E., F.S.I., etc., Engineer to the Council, Town Hall, Southall.

JUNE 17.—**Cobham.**—ROAD.—For the making up of Copse-road. Plans, specification, and form of contract with the Surveyor of Highways, Mr. T. R. Ware, Waterloo-road, Epsom.

✱ JUNE 17.—**West Ham, E.**—TAR-PAVING.—The West Ham Education Committee invite tenders for tar-paving playgrounds and redressing existing tar-paving at various schools. See advertisement in this issue for further particulars.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
•DISTRICT ENGINEER (GOVERNMENT FACTORY)	Ceylon P.W. Department.....	See advertisement in this issue	At once.
•QUANTITY SURVEYOR.....	Essex C.C.	200*l.* per annum.....	June 7
•PROFESSOR OF ARCHITECTURE	Manchester Univ. & Ed. Com.	600*l.* per annum.....	June 18

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
•STOCK OF PAPERHANGINGS & BLDR'S MERCHTS., WINCHESTER—On the Premises	H. W. Smith	May 29
•150 MANTELS AND OVERMANTELS, NEWINGTON-GREEN, N.—On the Premises	Joseph Hibbard & Sons.....	May 30
•STOCK-IN-TRADE PACKING CASE AND MANTEL MANUFACTURER—On the Premises	Hamilton, Palmer, & Co.	June 3
•BUILDING SITES, CITY OF LONDON AND HOLBORN—At the Mart	Jones, Lang, & Co.	June 10
•FREEHOLD PROPERTIES AND GROUND RENTS, BRIXTON—At the Mart	Edwin Fox, Bousfield, Burnetts, & Baddeley	June 12

OBITUARY.

Mr. A. Harston.

The death is announced of Mr. Arthur Harston, F.S.I., of Cawley-road, Hackney, who was senior partner of the late firm of Messrs. A. & C. Harston, of No. 15, Leadenhall-street, E.C., and Bexley Heath, Kent, architects and surveyors. Mr. Arthur Harston was born in 1841, and became a member of the Architectural Association in 1890; Mr. Christopher Harston, his partner, was elected a Fellow of the Royal Institute of British Architects in 1890. The firm were the architects—for the St. Pancras Guardians—of St. Pancras Workhouse in King's-road, built in 1892-5 at a cost of 72,000*l.*; the nurses' block, Highgate Infirmary, and the casual wards in Holmes-road, Kentish Town. For the Metropolitan Asylums Board:—The North-Eastern Hospital, Tottenham (illustrated in the *Builder* of May 25, 1901), for 550 beds, upon a site of 33 acres, built by Messrs. McCormick & Sons, contractors for 122,507*l.*; the Asylum, for 720 beds, Tooting Bec-common, and the receiving home for imbecile children, 1899-1902 (the *Builder*, June 20, 1903), at a cost of about 217,000*l.*; the Eastern Hospital, Homerton, and additions thereto, 1894-9; Joyce Green Hospital (first section), Dartford, for which Messrs. Leslie & Co., Ltd., tendered for 222,459*l.*, with staff chapel, crematorium, and the laying-out of the cemetery, 1900-2, and the subsequent completion of the plans with the addition of thirteen blocks, 1902-5; the extensive enlargement of the Western Hospital, Fulham, with eight isolation blocks, staff quarters, etc., 1895-6; of the Gore Farm Hospital, Dartford, and of the Darenth Asylum and Schools, 1893-4; and the Infirmary Buildings, Tooting. They were the architects of the Lewisham Infirmary, 1892-3; the conversion of the old Wells-street, Hackney, College, into an auxiliary workhouse, 1890; and the Sick Asylum, Bromley, E., for the Managers of the Poplar and Stepney Sick Asylum District, 1894; in November, 1900, they were with other architects selected to compete for the new infirmary, for 1,000 patients, for the sick poor of Bristol. Mr. Harston left estate of the gross value of 48,986*l.*, with net personalty sworn at 38,451*l.* He bequeathed 500*l.* to the London Hospital and 500*l.* to the Queen's Hospital for Children, Hackney-road, N.E.

Mr. F. Bonser.

On the 14th inst. the death took place of Mr. Frederick Bonser, in the fifty-eighth year of his age. He was well known to many London surveyors, having been articled to Messrs. Gardiner & Theobald; after serving his articles he worked for several years in various offices, and for the last twenty-two years he was Manager and Chief Assistant to Messrs. Leonard & Clarke, of Bishopsgate, E.C. He leaves two sons and four daughters.

Major-General Festing, late R.E.

The death, on May 16, at No. 56, Queen's-gate-terrace, S.W., is also announced of Major-General Edward Robert Festing, C.B., F.R.S., late R.E., aged seventy-three years. He received his commission as Lieutenant, Royal Engineers, in 1855, and served during the Central Indian campaigns and the Mutiny, 1857-9. Five years afterwards he became Deputy-General Superintendent in the Department of Science and Art, South Kensington, and in 1893-1904, was Science Director, Victoria and Albert Museum.

PATENTS.

APPLICATIONS PUBLISHED.*

7,300 of 1911.—Charles André: Gas-heated ovens.

9,447 of 1911.—Hermann Wegner: Apparatus for emptying gullies, mud-collecting chambers, or the like.

9,513 of 1911.—Richard Austin Rogers: Gas, oil, or like cooking-ovens.

9,569 of 1911.—Robert Alwyn Arnold Stephen Piercy: Devices for connecting girders, beams, and the like together.

9,583 of 1911.—John Smith: Rotary elevators and the like.

9,916 of 1911.—Allan Herbert Storer Campbell: Tiles for ceilings, walls, or the like.

10,304 of 1911.—Francesco Barberis: Flushing and like apparatus.

11,886 of 1911.—Francis Sumner Smith: Water-heating ranges.

13,390 of 1911.—John Matthew Henry Butcher: Shoots.

14,713 of 1911.—Percy Geikie Donald and Matthew Henry Matthews: Elevators or conveyors.

14,948 of 1911.—Raimund Janesch and Anton Schnell: Hollow walls or the like.

19,168 of 1911.—Paul Gunther and Hubertus Jacobi: Device for closing, opening, and bolting fanlight windows, transom windows, and the like.

19,854 of 1911.—Ludwig Klingelhofer: Method of constructing reinforced concrete lining for mine galleries.

20,807 of 1911.—Société Française de Chaleur et Lumière: Heating by the circulation of hot water.

20,814 of 1911.—Max Hynek: Automatic door-operating appliances.

23,119 of 1911.—Henry Harden Ashlock: Door and window guards.

24,036 of 1911.—Frederick Arthur Bullivant and George May Selby: Ropes for use as lifting-slings.

25,013 of 1911.—James Brown Griffith: Reinforced concrete girders.

27,470 of 1911.—David Krausz: Hinges for doors and windows.

90 of 1912.—August Sperlich: Pneumatically-operated door-latches.

2,466 of 1912.—Otto Gehricke: Hoists.

4,231 of 1912.—John Alfred Davenport: Hoops and stirrups for reinforced concrete and like construction.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

May 2.—By BOULTON & COOPER.

Wykeham, Yorks.—Langdale Bridge Farm and Moor Bird p.h., 50 acres, f.	£1,270

May 3.—By STEPHEN GREGORY & SON.

Whittlesey, Cambs.—Fen land, 8 a. 2 r. 14 p., f.	475
Arable land, 20 a. 2 r. 38 p., f.	1,140
Four cottages and pasture, 1 a. 3 r. 10 p., c.	235
Arable land, 5 a. 1 r. 3 p., c.	410
Bassenhally-rd., three cottages, c.	120
Garden land, 3 a. 0 r. 23 p., c.	380
New-rd., etc., six cottages, c.	465
Queen-st., shop and house, c.	370
Aliwal-rd., two cottages, f. and c.	215
St. Mary's-st., copyhold cottage	205

May 6.—By W. MAURICE-JONES.

Llanbadarn Fawr, Cardigan.—Cefncoed Farm, 210 a. 0 r. 10 p., f.	3,675

By R. T. HANDLEY.

Cleasby, Yorks.—Freehold farm, 30 acres	2,120

May 8.—By CHEVELL, LAWRANCE, & SON.

Lawshall, Suffolk.—Folly Farm, 25 a. 3 r. 30 p., f.	325

By BOULTON & COOPER.

Cornborough, Yorks.—Golden Fields and Mill Hill Farms, 145 acres, f.	£3,280

May 10.—By JONES, SON, & VERNON.

Blockley, Worcs.—Ditchfield-on-Fosse Farm and Mill, 331 acres, f.	6,700

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.	£ s. d.
Best Stocks.....	1 14 0
Picked Stocks for Facings	2 10 0

Per 1000, Delivered at Railway Depôt.

	£ s. d.		£ s. d.
Flettons.....	1 13 0	Best Blue Pressed Staffordshire...	3 15 0
Best Fareham Red	3 12 0	Do. Bullnose.....	4 0 0
Best Red Pressed Ruabon Facing	5 0 0	Best Stourbridge Fire Bricks ...	4 0 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glzd.Str'tch'rs	11 7 6	Double Headers One Side and two Ends	13 17 6 / 17 17 6
Headers	10 17 6	Two Sides and one End	18 17 6
Quoins, Bullnose, and 4½ in. Flats	14 17 6	Splays & Squints	16 7 6
D'ble Stretchers	16 17 6		

Second Quality £1 10s. per 1000 less than best.

	s. d.	
Thames and Pit Sand	6 9	per yard, delivered.
Thames Ballast	5 6	" "
Best Portland Cement	31 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 13s. 0d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly dpt.

STONE.

Per Ft. Cube.

	s. d.
BATH STONE—delivered on road waggons, Paddington Depôt.....	1 6½
Do. do. delivered on road waggons, Nine Elms Depôt.....	1 8½

PORTLAND STONE (20 ft. average)—

Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 3
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 4½

Per Ft. Cube, delivered at Railway Depôt.

	s. d.		s. d.
Ancaster in blocks..	1 10	Closeburn Red Freestone	2 0
Beer in blocks	1 6		
Greenshill in blocks	1 10	Red Mansfield Freestone	2 4
Darley Dale in blocks	2 4	Talacre & Gwespyr Stone	2 4
Red Corsehill in blocks	2 3		

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depôt.	s. d.
Scappled random blocks	2 10

Per Ft. Super., Delivered at Railway Depôt.

6 in. sawn two sides landings to sizes (under 40 ft. super.).....	2 3
6 in. rubbed two sides ditto, ditto	2 6
3 in. sawn two sides slabs (random sizes).....	0 11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7
1½ in. to 2 in. ditto, ditto.....	0 6

STONE (*Continued*).

HARD YORK—	s.	d.
Per Ft. Cube, Delivered at Railway Depôt.		
Scappled random blocks	3	0
Per Ft. Super., Delivered at Railway Depôt.		
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto	3	0
3 in. sawn two sides slabs (random sizes)	1	2
2 in. self-faced random flags	0	5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. In.	£	s.	d.	In. In.	£	s.	d.
20×10 best blue Bangor	13	2	6	20×10 best Eur'ka unfading green	15	17	6
20×12 ditto	13	17	6	20×12 ditto	18	7	6
20×10 1st quality ditto	13	0	0	18×10 ditto	13	5	0
20×12 ditto	13	15	0	16×8 ditto	10	5	0
16×8 ditto	7	5	0	20×10 permanent green	11	12	6
22×10 best blue Portmadoc	12	12	6	18×10 ditto	9	12	6
16×8 ditto	6	12	6	16×8 ditto	6	12	6

TILES.

At Railway Depôt.

	s.	d.		s.	d.
Best plain red roofing (per 1000)	42	0	Best "Hartshill" brand, plain sand-faced (per 1000)	45	0
Hip and Valley (per doz.)	3	7	Do. pressed (per 1000)	42	6
Best Broseley (per 1000)	50	0	Do. Ornamental (per 1000)	47	6
Do. Ornamental (per 1000)	52	6	Hip (per doz.)	4	0
Hip and Valley (per doz.)	4	0	Valley (per doz.)	3	6
Best Ruabon red, brown, or brindled (Edw'ds) (per 1000)	57	6	Staffords. (Hanley) Reds or Brindled (per 1000)	42	6
Do. Ornamental (per 1000)	60	0	Hand-made sand-faced (per 1000)	45	0
Hip (per doz.)	4	0	Hip (per doz.)	4	0
Valley (per doz.)	3	0	Valley (per doz.)	3	6

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.		£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14	0	0	...	15	10	0
Deals: best 3 by 9	13	10	0	...	14	10	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	10	0	...	12	10	0
Battens: best 2½ by 6 and 3 by 6	0	10	0		less than 7 in. and 8 in. best.		
Deals: seconds	1	0	0		less than best.		
Battens: seconds	0	10	0		"		"
2 in. by in. and 2 in. by 6 in.	9	10	0	...	10	10	0
2 in. by 4½ in. and 2 in. by 5 in.	9	0	0	...	10	0	0
Foreign Sawn Boards—							
1 in. and 1½ in. by 7 in.	0	10	0		more than battens.		
½ in.	1	0	0		"		

WOOD (*Continued*).

BUILDING WOOD (*Continued*)—	At per load of 50 ft. £	s.	d.		£	s.	d.
Fir timber: best middling Danzig or Memel (average specification)	5	0	0	...	5	10	0
Seconds	4	10	0	...	5	0	0
Small timber (8 in. to 10 in.)	3	17	6	...	4	0	0
Small timber (6 in. to 8 in.)	3	5	0	...	3	10	0
Swedish balks	2	12	6	...	3	0	0
Pitch-pine timber (30 ft. average)	5	5	0	...	6	0	0

JOINERS' WOOD.	At per standard.						
White Sea: first yellow deals, 3 in. by 11 in.	24	10	0	...	25	10	0
3 in. by 9 in.	22	10	0	...	23	10	0
Battens, 2½ in. and 3 in. by 7 in.	17	0	0	...	18	0	0
Second yellow deals, 3in. by 11in.	19	0	0	...	20	0	0
" " 3 in. by 9 in.	18	0	0	...	19	10	0
Battens, 2½ in. and 3in. by 7 in.	14	0	0	...	15	0	0
Third yellow deals, 3 in. by 11 in. and 9 in.	14	0	0	...	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	10	0	...	12	10	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	10	0	...	22	10	0
Do. 3 in. by 9 in.	18	10	0	...	19	10	0
Battens	14	0	0	...	15	0	0
Second yellow deals, 3 in. by 11 in	16	10	0	...	17	10	0
Do. 3 in. by 9 in.	15	0	0	...	16	0	0
Battens	11	10	0	...	12	10	0
Third yellow deals, 3in. by 11 in.	13	10	0	...	14	10	0
Do. 3 in. by 9 in.	13	0	0	...	14	0	0
Battens	10	10	0	...	11	0	0
White Sea and Petersburg—							
First white deals, 3 in. by 11 in.	15	0	0	...	16	0	0
" " 3 in. by 9 in.	14	0	0	...	14	10	0
Battens	11	10	0	...	12	10	0
Second white deals, 3in. by 11in.	14	0	0	...	15	0	0
" " 3 in. by 9 in.	13	0	0	...	14	0	0
Battens	10	10	0	...	11	0	0
Pitch-pine: deals	19	0	0	...	21	0	0
Under 2 in. thick extra	0	10	0	...	1	0	0
Yellow Pine—First, regular sizes	48	0	0	upwards.			
Oddments	32	0	0	"			
Seconds, regular sizes	33	0	0	"			
Oddments	28	0	0	"			
Kauri Pine—Planks per ft. cube.	0	4	6	..	0	6	0
Danzig and Stettin Oak Logs—							
Large, per ft. cube	0	3	0	...	0	3	9
Small " "	0	2	6	...	0	2	6
Wainscot Oak Logs, per ft. cube	0	6	6	...	0	8	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	10	...	0	1	0
¼ in. do. do.	0	0	8½	...		—	
Dry Mahogany—Houndras, Tabasco, per ft. super. as inch	0	0	10	...	0	1	1
Selected, Figury, per ft. super. as inch	0	1	6	...	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	...	0	1	0
Teak, per load	18	0	0	...	22	0	0
American Whitewood planks, per ft. cube	0	5	0	...	0	6	0

WOOD (*Continued*).

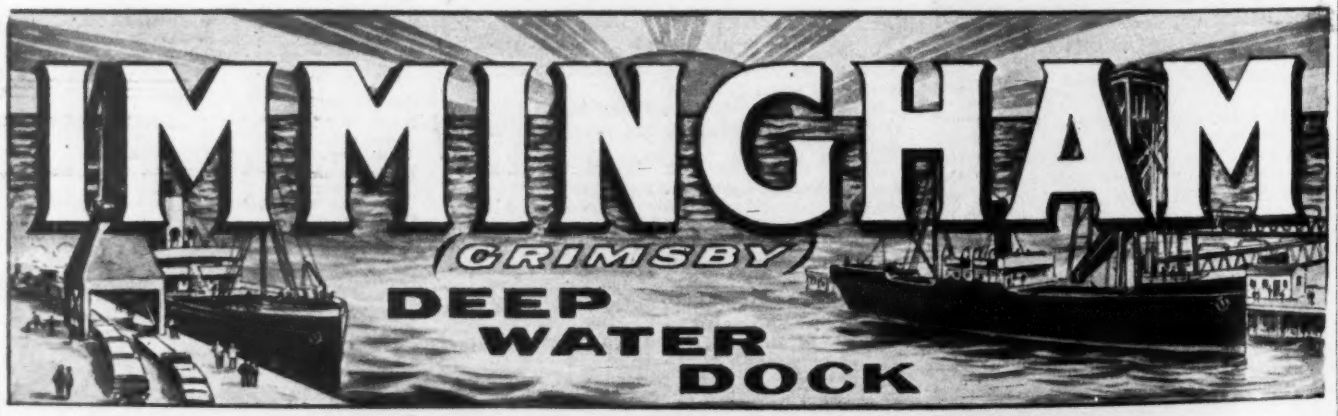
JOINERS' WOOD (*Continued*)—	Per square. £	s.	d.		£	s.	d.
Prepared Flooring, etc.—							
1 in. by 7 in. yellow, planed and shot	0	13	6	...	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	...	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	...	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	...	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	...	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	...	0	16	6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0	11	0	...	0	13	6
1 in. by 7 in. " "	0	14	0	...	0	18	6
¾ in. by 7 in. white " "	0	10	0	...	0	11	0
1 in. by 7 in. " "	0	12	9	...	0	15	0
6 in. at 6d. to 9d. per square less than 7 in.							

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	7	10	0	...	8	0	0
Compound Girders, ordinary sections	9	10	0	...	10	0	0
Steel Compound Stanchions	11	0	0	...	12	0	0
Angles, Tees, and Channels, ordinary sections	9	10	0	...	10	0	0
Flitch Plates	9	10	0	...	9	10	0
Cast Iron Columns & Stanchions, including ordinary patterns	7	10	0	...	8	10	0

METALS.

IRON—	Per ton, in London. £	s.	d.		£	s.	d.
Common Bars	9	0	0	...	9	10	0
Staffordshire Crown Bars, good merchant quality	9	5	0	...	9	15	0
Staffordshire "Marked Bars"	11	0	0	...	—		
Mild Steel Bars	9	5	0	...	9	15	0
Hoop Iron, basis price	10	0	0	...	—		
" " Galvanised	17	10	0	...	—		
(*And upwards, according to size and gauge.)							
Sheet Iron Black—							
Ordinary sizes to 20 g.	10	5	0	...	—		
" " 24 g.	11	5	0	...	—		
" " 26 g.	12	15	0	...	—		
Sheet Iron, Galvanised, flat, ordinary quality—							
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	10	0	...	—		
Ordinary sizes to 22 g. and 24 g.	16	0	0	...	—		
" " 26 g.	17	0	0	...	—		
Sheet Iron, Galvanised, flat, best quality—							
Ordinary sizes to 20 g.	18	10	0	...	—		
" " 22 g. and 24 g.	19	0	0	...	—		
" " 26 g.	20	10	0	...	—		



IS OPENED PROVISIONALLY.

POINTS OF MERIT:

Favourable Situation.

Immingham Dock is geographically the most central coal port for the Continent, and is in direct rail communication with the great coalfields of the West Riding and South Yorkshire, Derbyshire, Nottinghamshire, &c.

Always Accessible.

Immingham Dock has a storm-protected harbour and deep water channel and entrance lock, enabling the largest ships to enter and leave at any state of the tide.

Most Modern Equipment.

Immingham Dock has eight coal hoists capable of shipping 5,600 tons per hour.
Largest ships can bunker at deep water jetty only ten miles from the open sea—at any time of the day or night.
Storage accommodation is provided for 11,600 loaded wagons, and there are 170 miles of sidings.
Every precaution taken to minimise breakage of coal.
Movable hoist enables two "holds" of a vessel to be loaded simultaneously.

Low Dock Charges.

Immingham Dock charges are more favourable than at any competitive port.

For Information apply Great Central Goods Agents or Port Master, Immingham Dock, Grimsby.
Illustrated Brochure "3" and Map "3," printed in English, French or German, post free from G.C.R. Publicity Office, 216, Marylebone Road, London, N.W.

SAM FAY, General Manager.

METALS (*Continued*).

IRON (*Continued*)—	Per ton, in London. £ s. d.		£ s. d.
Galvanised Corrugated Sheets—			
Ordinary sizes, 6ft. to 8ft. 20 g.	15 0 0	..	—
" " 22 g. and 24 g.	15 5 0	...	—
" " 26 g.	16 15 0	..	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker.....	12 10 0	...	—
Best Soft Steel Sheets, 2 g. & 24 g.	13 10 0	...	—
" " 26 g.	15 10 0	...	—
Cut Nails, 3 in. to 6 in.....	11 0 0	..	11 10 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	£ s. d.		
LEAD—Sheet, English, 4lb. and up	20 10 0	...	—
Pipe in coils	21 0 0	...	—
Soil pipe	24 0 0	...	—
Compo pipe	24 0 0	...	—
ZINC—Sheet—	In casks of 10 cwt.		
Vielle Montagne	33 10 0	...	—
Silesian	33 5 0	...	—
Zinc, in bundles, 1s. per cwt. extra.			
COPPER—			
Strong Sheet .....per lb.	0 1 0	...	—
Thin " ..... "	0 1 1	...	—
Copper nails..... "	0 0 10	...	—
Copper wire ..... "	0 0 10	...	—
BRASS—			
Strong Sheet ..... "	0 0 11	...	—
Thin ..... "	0 1 0	...	—
TIN—English Ingots..... "	0 2 0	...	—
SOLDER—Plumbers' ..... "	0 0 9½	...	—
Tinmen's ..... "	0 1 0½	...	—
Blowpipe ..... "	0 1 2½	..	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

15 oz. thirds	2½d.	26 oz. fourths	3½d.
" fourths	1¾d.	32 oz. thirds.....	5d
21 oz. thirds.....	3½d.	" fourths	4½d.
" fourths	2¾d.	Fluted Sheet, 15 oz.	3½d.
26 oz. thirds.....	4d.	" 21 oz.	4½d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

⅛ Rolled plate	2½d.	Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white.....	3½d.
⅛ Rough rolled and rough cast plate..	2¾d.		
¼ Rough rolled and rough cast plate..	3d.	Ditto, tinted.....	5d

* Not less than two crates.

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 3 8
" " " in barrels.....	"	0 3 9
" " " in drums	"	0 3 11
Boiled " in barrels.....	"	0 3 11
" " " in drums	"	0 4 2
Turpentine in barrels	"	0 3 0
" in drums	"	0 3 2
Genuine Ground English White Lead,	per ton	28 0 0
Red Lead, Dry	"	24 0 0
Best Linseed Oil Putty	per cwt.	0 10 6
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak.....	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel.....	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan.....	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TO CORRESPONDENTS.

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All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

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We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

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N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 6 *p.m. on Wednesday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

BIRMINGHAM.—For new engine house, engineers' and blacksmiths' shops and stores at the Western-road Workhouse, for the Guardians of the Poor, Birmingham Union. Messrs. W. H. Ward, architects, Paradise-street, Birmingham :—

Potheroe & Co.	£1,278	F. H. Smith	£1,148
Oakley & Coulson ...	1,199	B. Whitehouse & Sons	1,143
H. Willcock & Son	1,198	E. Crowder	1,137
J. Barnsley & Sons	1,196	S. F. Swift	1,133
W. H. Gibbs.....	1,195	G. Webb & Sons, Birmingham*	1,121
W. & J. Webb	1,193	J. Bowen & Sons ...	1,079
W. Sapcote & Sons	1,177		
H. Dorse	1,164		
J. Dullow & Sons ...	1,150		

CADNEY.—For alterations and additions to the Council school, for the Lindsey Education Committee. Messrs. Scorer & Gamble, architects, Lincoln. Quantities by architects :—

G. R. Usher	£667 10	B. Pumfrey.....	£537 0
J. Stamp.....	664 0	T. Sutton, Market Rasen*	536 0
Scupham & Son...	585 0		
J. R. Mauders.....	560 0		

DISS.—For restoration of the tower and other work at Winfarthing Church, Diss, for Rector and Churchwardens. Messrs. Lacey & Upcher, architects, Norwich. Quantities by the architects :—

W. T. Newson & Sons.....	£427 9 3	H. C. Greengrass	£320 0 0
H. S. Wallis & Sons	383 14 0	J. Ayton.....	303 15 2
R. Hogg & Sons	376 0 0	W. H. Ludkin ...	298 0 0
J. W. Trudgett	364 0 0	Cubitt & Goth ...	280 10 0
R. Chapman	350 2 0	W. J. Hannant...	269 5 0
Blackburn, Starling, & Co	338 16 0	E. J. Smith	257 0 0
		Neal Bros., N. Elmham*	204 12 6

HULL.—For erection of Eureka Picture Hall, Hessle-road. Mr. J. Abbott, arcnitect and surveyor, Hull :—

J. Southern ..	£2,431 1 2	Simpson & Son	£2,239 9 9
F. E. Sugden	2,300 0 0	T. Bays & Son	2,215 15 10
A. Lison	2,299 0 0	G. Houlton & Son, Hull*	2,210 0 0
P. T. Kettlewell	2,298 10 0	M. Harper ...	2,180 0 0
W. Lison & Son	2,287 12 6		
F. Goates & Son	2,265 0 0		

LEAMINGTON.—Accepted for alterations, reparations, etc., and the erection of a new lodge at Ashornehill, near Leamington, Warwickshire. Mr. C. M. C. Armstrong, architect, Warwick :—

G. F. Smith & Sons, Leamington ... £1,632 15 8

LONDON.—For repairs and other works at Nos. 14, 16, 18, and 20, Merthyr-terrace, Barnes, for the Metropolitan Water Board :—

Clemens Bros.....	£65 10	W. King & Sons	£57 0
G. Wimpey & Co. ...	63 0	W. Chapman & Sons	53 0
Johnson & Co.....	57 15		

LONDON.—For erection of installations of three Diesel oil engines with horizontal three-throw pumps and appurtenant works at Cricklewood and Fortis Green, for the Metropolitan Water Board :—

Hick, Hargreaves...	£25,384	Korting Bros.	£21,527
Cole, Marchent, & Morley	25,045	Glenfield & Kennedy	21,200
Westinghouse Co...	23,490	Willans & Robinson	20,506
Diesel Engine Co...	23,116	Mirrlees, Bickerton, & Day, Ltd.	20,108
Sulzer Bros.	23,000		
Tosi	22,711		
Tosi	21,751		

LONDON.—For erection of a Diesel oil engine with deep pump well at Green-street, Green, for the Metropolitan Water Board :—

Westinghouse Co.....	£3,548 0
Tosi.....	3,347 10
Hick, Hargreaves, & Co.....	3,320 0
Cole, Marchent, & Morley	3,293 0
Sulzer Bros.....	3,130 0
Korting Bros.....	3,050 0
Diesel Engine Co.....	3,044 0
Glenfield & Kennedy	2,980 0
Willans & Robinson	2,766 0
Mirrlees, Bickerton, & Day, Ltd.	2,678 0

LONDON.—For external and internal repairs at Nos. 9 and 10, Aveny-row, Brook-street, W., for the Metropolitan Water Board :—

Hampton & Son.....	£99 14	Crooks & Co.	£57 10
W. C. James	62 15	W. King & Sons.....	52 0
Johnson & Co.	59 0		

LONDON.—For rebuilding the Leipsic-road School, Camberwell, for the London County Council :—

J. Allen & Sons, Ltd.	£19,419 0	G. Godson & Sons	£16,980 0
W. King & Son ...	18,587 0	W. Johnson & Co., Ltd.....	16,944 0
J. Carmichael ...	18,090 0	H. L. Holloway	16,700 0
Patman & Fotheringham, Ltd. ...	17,868 0	J. & C. Bowyer, Ltd.	16,379 0
W. Smith & Son	17,508 0	Holliday & Greenwood, Ltd.	16,378 0
C. Wall, Ltd.	17,396 5	E. Lawrance & Sons, Ltd.	16,365 0
J. Appleby & Sons	17,541 0	T. D. Leng, Evelyn-street, Deptford*	16,302 0
W. Downs	17,447 0		
J. Marsland & Sons	17,025 0		

[The Architect's estimate comparable with the tenders is £16,278.]

LONDON.—For cleaning the cargo tanks, etc., in connexion with the overhaul and repair of s.s. *Burns*, for the London County Council:—

P. Tye & Co.	£35 0
J. Wright & Son	46 0
The London Sculling Co., Ltd., Victoria Dock-road, E.*	42 10

LONDON.—For the erection of a handicraft centre and new house at the Moreland-street School, Finsbury, for the London County Council:—

Brand, Pettit, & Co.	£2,522 0 0
Woodward & Co.	2,494 0 0
J. Grover & Son	2,464 0 0
F. Smith & Co.	2,455 1 11
McCormick & Sons, Ltd.	2,361 0 0
W. Beason	2,359 0 0
G. S. S. Williams & Son	2,304 0 0
L. H. & R. Roberts	2,290 0 0
E. Lawrance & Sons, Ltd.	2,256 0 0
G. Godson & Son	2,189 0 0
E. A. Roome & Co., 36, Basinghall-street	2,173 0 0

LONDON.—For the providing and fixing heating apparatus at the Ancona-road County Secondary School, Woolwich, for the London County Council:—

Comyn Ching & Co.	£1,895 0
J. Grundy, Ltd.	1,789 0
C. P. Kinnell & Co., Ltd.	1,600 0
W. J. Burroughes & Sons	1,577 0
W. G. Cannon & Sons, Ltd.	1,560 0
J. & F. May	1,490 0
Ashwell & Nesbit, Ltd.	1,467 0
A. Macintosh & Sons, Ltd.	1,449 13
Brightside Foundry and Engineering Co., Ltd	1,365 0
G. & E. Bradley	1,337 0
G. N. Haden & Sons	1,300 0
Palowkar & Sons, 90-91, Queen-street	1,267 6

[The Architect's estimate comparable with the tenders is £1,390.]

LONDON.—For erection of four new hostels and enlargement of the Southwood House Hostel at the Avery-hill Training College, Woolwich, for the London County Council:—

W. Mills & Sons	£50,119 7 0
E. Proctor & Sons	45,566 10 9
E. Lawrance & Sons, Ltd.	44,504 0 0
T. Crossley & Son	44,245 0 0
F. & T. Thorne	42,267 0 0
Rowley Bros., Boundary Works, Wood-green	42,141 0 0

[The Architect's estimate comparable with the tenders is £42,534.]

LONDON.—For erection of boilers and superheaters at Crossness pumping-station, for the London County Council:—

W. Wilson & Co.	£3,748 0	Spurr, Inman, & Co., Ltd.	£3,440 0
Yates & Thom, Ltd.	3,683 0	Galloways, Ltd., Manchester	3,220 0
D. Adamson & Co.	3,475 0		

LONDON.—For construction of tramways from Forest-hill to Rushey-green, for the London County Council:—

A. N. Coles	£20,577 12 11
J. Mowlem & Co., Ltd.	20,297 10 5
Dick, Kerr, & Co., Ltd.	20,242 19 7
G. Wimpey & Co.	19,523 2 3
Kirk & Randall, Woolwich, S.E.	19,417 13 4

[Chief Engineer's estimate comparable with the tenders is £19,919.]

LONDON.—For the removal of filth from Deptford pumping-station, for the London County Council:—

	A Cubic Yard. s. d.
H. Covington & Sons, Ltd.	4 4
W. R. Cunis, Ltd.	4 1
J. Paton & Son, Fenchurch-street, E.C.	4 0

LONDON.—For erection of a school for 125 physically defective children on the "Reay" site, Brixton, for the London County Council:—

G. Parker & Sons	£6,445 0 0	T. D. Lang	£5,607 0 0
Trigg & Co.	6,323 0 0	W. Smith & Son	5,695 0 0
J. Garrett & Son	6,259 0 0	J. & C. Bowyer, Ltd.	5,694 0 0
J. Smith & Sons, Ltd.	6,109 0 0	Lole & Co.	5,570 19 1
W. Downs	6,100 0 0	E. Lawrance & Sons, Ltd.	5,570 0 0
R. Cook & Sons	6,099 0 0	W. Johnson & Co., Ltd.	5,477 0 0
J. & M. Patrick	5,910 0 0		
Rice & Son	5,785 0 0		

[The Architect's estimate comparable with the tenders is £5,568.]

LONDON.—For structural improvements at the Hawley-crescent School, St. Pancras, for the London County Council:—

Brand, Pettit, & Co.	£12,142 0 0
McCormick & Sons, Ltd.	11,922 0 0
F. & T. Thorne	11,600 0 0
G. S. S. Williams & Son	11,360 0 0
McLaughlin & Harvey, Ltd.	11,331 1 7
G. Godson & Sons	11,143 0 0
L. H. & R. Roberts	11,037 0 0
Rowley Bros.	10,972 0 0
J. & C. Bowyer, Ltd.	10,889 0 0
W. Johnson & Co., Ltd.	10,878 0 0
E. Lawrance & Sons, Ltd., 15-16, Wharf-road, City-road*	10,651 0 0

[The Architect's estimate comparable with the tenders is £10,649.]

MANCHESTER.—For St. Jerome's Church, for the Bishop of Manchester's Commission. Mr. E. H. Lingen Barker, architect, 78, King-street, Manchester. Quantities by Mr. G. Silvester, 7, Adam-street, Adelphi, London:—

Castle & Son	£6,725	Burgess & Galt	£5,725
Lunt & Son	6,572	Ridyard	5,660
Robertson & Co.	6,136	Gerrard & Sons	5,648
Townson & Sons	6,018	Clayton Bros.	5,648
Hamilton & Son	5,900	Thorpe & Sons	5,574
Wildgoose	5,891	Moore, Eccles‡	5,425
Normanton & Son	5,812		

‡ Accepted after modification.

NORTHWOOD.—For erection of a house in Maxwell-road, for Mr. C. S. Pitt. Messrs. Moscrop-Young & Glanfield, Licentiate and A.R.I.B.A., architects, 20, Brook-street, W.:—

W. E. Wallis & Sons	£1,110	Hill Bros.	£1,037
C. Brightman & Son	1,085	S. Pither, Pinner*	875
A. E. Page	1,075		

NORWICH.—For painting (externally) various schools. Mr. C. J. Brown, architect and surveyor, Norwich:—

Coleman-road School.

I. W. King, Grove-road, Norwich*	£16 10

Heigham-street School.

I. W. King, Grove-road, Norwich*	42 0

Horns-lane School.

J. & J. Reid & Son, Pottergate-street, Norwich*	44 0

Nelson-street School.

A. Burrell, Unthank-road, Norwich*	53 10

Surrey-road School.

G. Marshall, Heath-road, Norwich*	44 10

SOUTHAMPTON.—For proposed yacht stores at Northam, Southampton, for Messrs. J. G. Fay & Co., Ltd. Mr. Walter Wheeler, A.R.I.B.A., architect and surveyor, Southampton:—

H. Stevens & Co.	£4,200	Playfair & Toole*	£4,117
Jenkins & Sons, Ltd.	4,170		

[All of Southampton.]

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